DOG RIVER-MATAWIN FOREST

INDEPENDENT FOREST AUDIT
2000-2005

Prepared by:

Arbex Forest Resource Consultants Ltd.
Oxford Mills, Ontario

August 2006

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1.0. EXECUTIVE SUMMARY

This report presents the findings of an Independent Forest Audit (IFA) conducted on the Dog River Matawin Forest (DRMF) for the five-year period from April 1st, 2000 to March 31st, 2005.

The audit conformed to the requirements of the 2005 Independent Forest Audit Process and Protocol (IFAPP) prepared by the Ontario Ministry of Natural Resources (OMNR). The Independent Forest Audit (IFA) process is based on a detailed assessment of eight broad principles. Each principle has a series of specific criteria which are examined to determine whether or not the management of the Forest was in compliance with the legislation, regulations, and policies that were in effect during the audit term.

The audit assessed forest management on Sustainable Forest Licence (SFL) # 542459 issued to Bowater Pulp and Paper Canada Inc. (now Bowater Canadian Forest Products Inc.). The SFL is managed by Bowater from its Woodlands Office situated in Thunder Bay. The Thunder Bay District of the Ontario Ministry of Natural Resources (OMNR) is responsible for the administration of the licence. Specifically, for the 2000- 2005 period this audit evaluated and assessed;

- The planning, development and implementation of the 2000 -2005 FMP.
- The planning and development of the 2005–2010 FMP.

Following a comprehensive review of records and documents, field investigations and information received from interviews, meetings and questionnaires, it is our conclusion that the development and implementation of the 2000 FMP substantially met FMPM requirements and was sustainable.

Reasons for this conclusion include;

- There has been no major shift in working group area over the past three plan terms.
- Forest harvesting has emulated natural disturbance patterns.
- Forest operations were conducted in accordance with guidelines.
- The area classified as barren and scattered and not satisfactorily regenerated decreased significantly over the 1990 to 2000 term.
- The area regenerated approximated the area harvested.

- The Selected Management Alternative (SMA) provided a predictable and even flow of wood volume.
- Protection was provided to the tourism industry and access was made available for recreational use.
- Bowater worked with First Nations to increase employment opportunities.
- All consultation requirements were met.

However, the audit also identified a number of serious issues:

- The Report of Past Forest Operations (RPFO) identified long term wood supply issues in the 1995-2000 FMP however, the 2000 FMP continued to defer harvest reductions.
- There is a projected reduction of preferred marten habitat from 200,000 ha to 80,000 ha over forty years (although followed by stable levels).
- Bowater yield predictions were routinely optimistic. During the audit period actual volumes per ha were approximately 30% less than forecasted.
- The large area classified as depleted (approximately 20% of the forest) is a concern, particularly in light of the projected future wood supply issues on the Forest.
- Compliance infractions were significantly higher than those on similar-sized Forests in Ontario.
- Bowater needs to improve its field tracking to facilitate the early assessment and treatment of competition on mixed wood sites.
- The practice of suspending blocks (over 100 at the time of the field audit) compromised silviculture effectiveness by allowing competing vegetation to become established on sites prior to renewal treatment; additionally areas of piled wood were not available for treatment.

The 2005 FMP continues the deferral of a harvest reduction on the Forest in anticipation that future models, improvements in the forest inventory, and new knowledge will result in additional wood supplies being identified. It is our conclusion that this is a precarious strategy with a high element of risk.

Many of the FMPM planning and public consultation requirements for the development of the 2005 FMP were not met. While an approved FMP was eventually produced, the planning process was, in our assessment, profoundly flawed.

We provide 16 recommendations and 1 suggestion to address issues identified during the audit.

In making the final audit decision we assessed the auditees' performance relative to the planning, consultation and implementation of the 2000 FMP, and planning and public consultation processes for the 2005 FMP. While the development and implementation of the 2000 FMP substantially met requirements, it also raised a number of serious long term issues. These issues, coupled with the flawed 2005 planning process make it impossible to recommend licence renewal.

With full consideration of our audit findings we conclude that Bowater was not adequately in compliance with the legislation, regulations, and policies that were in effect at that time. We recommend that the Minister not extend SFL # 542459 for a further five-year term.

2.0. INTRODUCTION

This report presents the findings of an Independent Forest Audit (IFA) conducted on the Dog River-Matawin Forest (DRMF) for the five-year period from April 1st, 2000 to March 31st, 2005. The audit conformed to the requirements of the 2005 Independent Forest Audit and Process Protocol (IFAPP) prepared by the Ontario Ministry of Natural Resources (OMNR). Sustainable Forest Licence (SFL) # 542459 was issued to Bowater Pulp and Paper Canada Inc. (now Bowater Canadian Forest Products Inc.[1]).

The SFL is managed by Bowater Inc. from its Woodlands Office situated in Thunder Bay. The Thunder Bay District of the Ontario Ministry of Natural Resources, Northwest Region, is responsible for the administration of the Dog River-Matawin Forest License.

2.1. AUDIT PROCESS

Ontario legislation requires that Crown Land Forest Management Units be audited every five years by an Independent Auditor. The audit applies to the Ontario Ministry of Natural Resources (OMNR) and all licencees (primary and overlapping) on the forest management unit. The audit considers the compliance aspect of forest management planning by reviewing the management plan in relation to specific planning manual requirements in place at the time of plan approval, and a review of actual operations and required monitoring and reporting. The audit also considers the SFL's specific contractual compliance relative to its licence agreement. The effectiveness of forest management activities is examined based on planned vs. actual results as verified through record examination and field sampling. The audit reviews whether actual results in the field are comparable with planned results, and determines if they are accurately reported.

The Independent Forest Audit Process and Protocol (IFAPP), developed by the OMNR, provides a comprehensive and consistent method of evaluating forest management activities on Crown land. The IFAPP contains approximately 400 individual procedures that direct the independent auditor to collect, analyze, interpret and document appropriate information to determine if the various criteria have been met. The results of the evaluation of evidence against the criteria determine the audit findings. Those findings are then analyzed and aggregated to determine the outcome of the audit.

The IFAPP states that the purpose of the Independent Forest Audit is to:

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[1] Formerly Bowater Pulp and Paper Canada Inc.

- Assess to what extent forest management planning activities comply with the Forest Management Planning Manual and the Act.
- Assess to what extent forest management activities comply with the Act and with the forest management plans, the manuals approved under the Act and the applicable guides.
- Assess the effectiveness of forest management activities in meeting the forest management objectives set out in the forest management plan, as measured in relation to the criteria established for the audit.
- Compare the forest management activities carried out with those that were planned.
- Assess the effectiveness of any Action Plans implemented to remedy shortcomings revealed by a previous audit.
- Review and assess a licensee's compliance with the terms and conditions of the forest resources licence.

The audit process is based on a detailed assessment of eight broad principles:

- Commitment
- Public participation
- Forest management planning
- Plan implementation
- System support
- Monitoring
- Achievement of management objectives and sustainability
- Contractual obligations

Each IFAPP principle has a series of specific criteria, which, if met, will result in the achievement of that principle. The specific criteria are based on applicable legislation, manuals, and guidelines related to forest management contained in the 2005 IFAPP.

The IFA was planned and organized by Arbex Forest Resource Consultants Ltd. The audit team consisted of three professional foresters and three specialists with expertise in fish and wildlife management, forest management planning, land use planning, public consultation, and compliance. Each team member was assigned specific duties and responsibilities. A list of audit team members and their qualifications is presented in Appendix B.

The Dog River-Matawin IFA process consisted of the following elements:

Audit Plan: An Audit Plan describing the schedule of audit activities, audit team members and participants and the auditing methods was prepared and submitted to the auditees (Company and OMNR) as well as a representative of the Local Citizens Committee (LCC).

Public Notices: The following public consultation methodologies were utilized for the delivery of the audit:

- A newspaper notice advised the public of the audit and invited public comment.
- All LCC members received a letter of notification of the audit and an invitation to participate.
- All First Nations on, or adjacent to, the Forest received letters and follow-up telephone calls requesting their involvement.
- Letters were sent to a random sample of individuals from the OMNR FMP mailing list (35%) requesting their involvement in the audit. A survey form was included along with a request to mail or telephone their responses to the auditor.
- Telephone contacts, interviews, and meetings were conducted with representative stakeholders (determined from record reviews and analysis of issues) who were involved with forest planning and operations on the Forest.

Field Site Selection: We spent two days (July 19th -20th) at the Bowater Woodlands Office in Thunder Bay. At that time, a pre-audit meeting was held with Bowater and OMNR officials to review the draft Audit Plan and select sites for field sampling. These sites were randomly selected to provide a representative sample of forest management activities conducted during the audit period.

Pre-audit Document Review and Interviews: We reviewed all documents associated with the development and implementation of the 2000–2005 Forest Management Plan (FMP). Telephone interviews were conducted with representative stakeholders. Additionally we reviewed planning team minutes, and other documents associated with the preparation of the 2005 FMP.

Site Audit: We spent five days on the Dog River-Matawin Forest (September 12th – September 16th) to review records and conduct the field audit. Key Bowater and OMNR staff and stakeholders were interviewed, documents and records were reviewed, and field sampling was carried out.

Sampled sites represented approximately 20 percent of the operations carried out by Bowater, independent contractors, and Overlapping Licencees. Field sites were accessed by road or by helicopter. Table 1 presents the sampling intensity of the field audit by activity. Field samples were stratified to ensure representation of silvicultural activity, season of operation, contractors, year of operation, Areas of Concern (AOC) and other protected areas.

Individual sites were selected to represent a primary activity (e.g. harvesting, site preparation, chemical tending). All associated activities at the site were assessed at the same time, allowing us to augment the planned sampling intensity. We also examined primary, secondary, and tertiary road construction and maintenance, and associated water crossings. During travel between inspection sites we observed additional AOCs and management practices. Landscape-scale examinations were also made from aerial observations.

Table 1. Field Sampling Intensity on the Dog River-Matawin Forest for Primary Audit Activity

ACTIVITY	TOTAL AREA (HA) / NUMBER (2000-2005)	AREA (HA) / NUMBER SAMPLED	PERCENT[2] SAMPLED
Harvest	47,380	7,580	16
Tree Planting	18,210	3,642	20
Seeding	7,664	1,532	20
Mechanical Site Preparation	22,790	4,558	20
Aerial Spray	18,900	3,780	20
Chemical Ground Tending	725	145	20
Spacing	2,959	926	30
Slash Pile Burning	718	144	20
Coppice Regeneration	17,176	3,435	20
Specified Procedures Area	18,923	3,785	20
Free-to-Grow	43,498	8,699	20
Areas of Concern[3]	N/A[4]	20 point features 900 Ha	N/A
Water Crossings	120	18	15

Report: This report includes a description of the audit process and a discussion of findings and conclusions. Recommendations are directed at deficiencies in forest management and associated processes that require corrective action, and must be dealt with in an Action Plan. This plan must be developed within 2 months of receipt of the final Audit Report. Suggestions are directed at less serious issues and simply provide advice for improvement. A "best practice" highlights an exceptional management practice or high level of performance.

Initiation of the forest management planning process typically takes place approximately 2.5 years prior to plan approval. This audit included a review of planning activities in the 'lead–up" period from January 1998 to plan approval in 2000, and the implementation of the plan during the 2000 to 2005

[2] Percent sampled represents the location of prime audit activity. In addition to the prime audit activity all additional silvicultural, protection and construction activities on that site were also inspected. For example, a site selected primarily to audit planting activities was also inspected for associated chemical tending, culvert construction etc.

[3] A significant number of AOCs on the Forest are linear features (e.g. riparian areas, moose aquatic) as opposed to point features (e.g. nest sites). For this reason, most of the assessment was area based and observed by helicopter.

[4] The auditor was unable to determine total area (see footnote # 3).

audit period. Additionally, we examined planning team and public consultation activities related to the development of the 2005 FMP, which were completed during the audit period.

2.2. FOREST MANAGEMENT CONTEXT

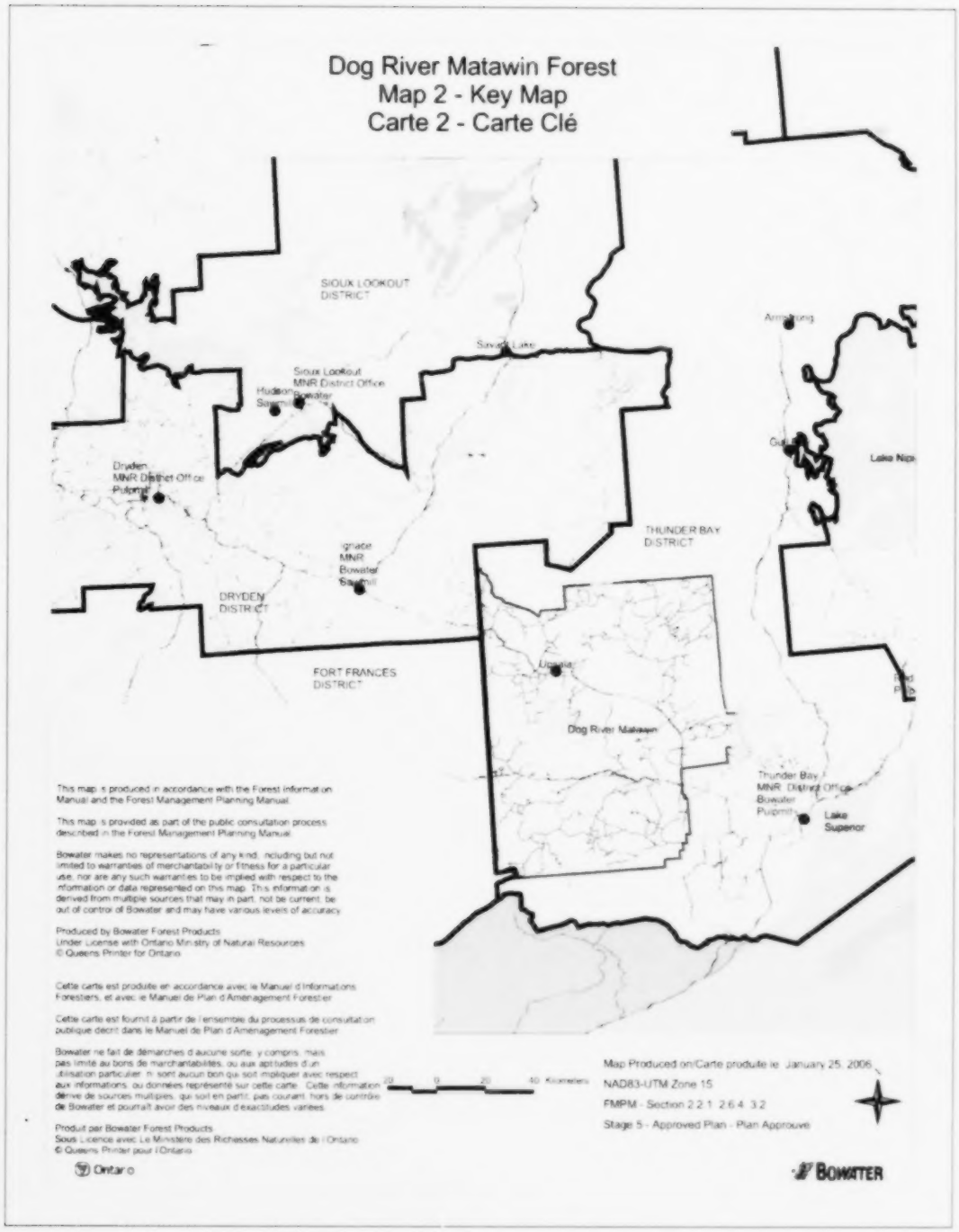
Bowater administers forest management activities through its Thunder Bay Woodlands office under Sustainable Forest License (SFL), # 542459. The Forest was previously licensed to Avenor Inc. under Forest Management Agreement (FMA) # 50240. The SFL is comprised of two former licensed parcels; the Dog River section to the north and the Matawin section to the south.

The DRMF is within the OMNR Thunder Bay District in the Northwest Region and located to the west of the city of Thunder Bay. Its length is approximately 120 kilometres (north-south) and width is 100 kilometres (east-west). Both Highway 17 and the Canadian Pacific Railway line bisect it in a NW-SE direction. It extends west to the eastern boundary of Quetico Park and north to Pakashkan Lake. Lac des Mille Lacs First Nation Reserves #22A1 and 22A2, and the communities of Upsala, Kashabowie, and Shebandowan are in the Forest. It is well accessed by provincial highways, railways, and forest access roads and is used extensively by the public.

The 2000-2020 and the 2005-2025 Forest Management Plans (FMP) were completed under the requirements of the *Crown Forest Sustainability Act (CFSA)* and the *Forest Management Planning Manual (FMPM 1996)*.

2.2.1. MAP OF THE MANAGEMENT UNIT (SFL)

Figure 1 shows the location of the DRMF.


Dog River Matawin Forest
Map 2 - Key Map
Carte 2 - Carte Clé
SIOUX LOOKOUT DISTRICT
Sioux Lookout MNR District Office
Dryden MNR District Office
THUNDER BAY DISTRICT
DRYDEN DISTRICT
FORT FRANCES DISTRICT
Dog River Matawin
Thunder Bay MNR District Office
Lake Superior
Lake Nipi
This map is produced in accordance with the Forest Information Manual and the Forest Management Planning Manual.
This map is provided as part of the public consultation process described in the Forest Management Planning Manual.
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Ontario
20 0 20 40 Kilometers
Map Produced on/Carte produite le: January 25, 2006
NAD83-UTM Zone 15
FMPM - Section 2.2.1, 2.6.4, 3.2
Stage 5 - Approved Plan - Plan Approuvé
BOWATER

FIGURE 1. LOCATION OF THE DOG RIVER-MATAWIN FOREST.

2.2.2. DESCRIPTION OF THE FOREST

The Dog River-Matawin Forest is 932,122 hectares in size (all land ownerships). The total Crown managed forest area is 799,130 ha of which 688,785 ha is classified as production forest[5]. Water occupies 111,714 ha.[6] Figure 2 presents a summary of the land area (Crown Managed Lands) of the DRMF.

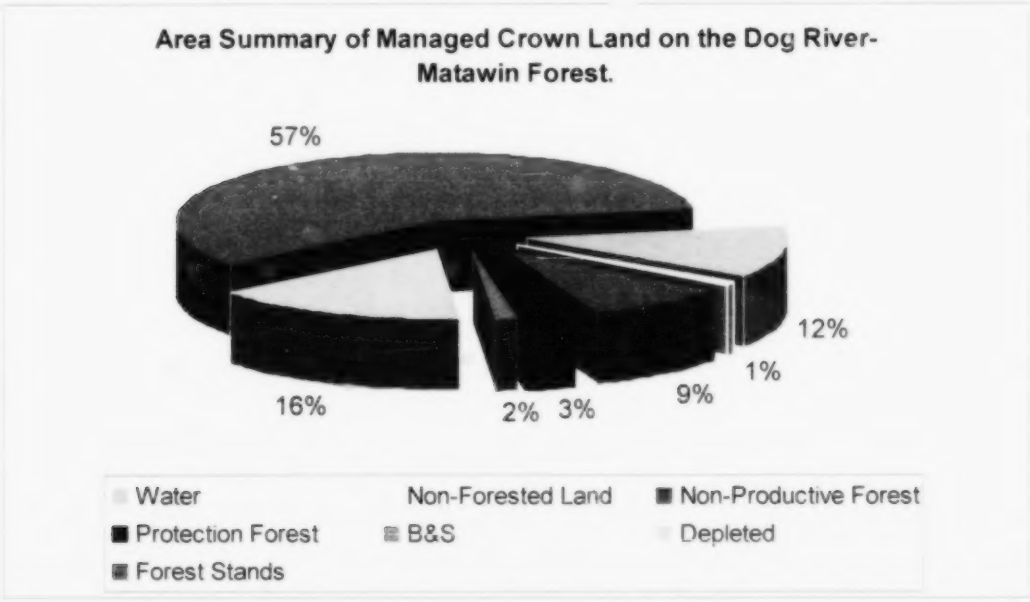

FIGURE 2. AREA SUMMARY MANAGED CROWN LAND ON THE DOG RIVER-MATAWIN FOREST

A significant area (143,626 hectares) of the Crown managed landbase was classified as "depleted". Depleted areas are stands that are regenerating, but have not been included in the Forest Resource Inventory (FRI), as their free-to-grow status had not been determined. Barren and scattered / not satisfactorily regenerated land occupied 14,889 ha.

The predominant cover types of the DRMF are boreal forest species; although it also contains species associated with the Great Lakes St. Lawrence Forest Region which typically occur in association with boreal forest types.

Figure 3 illustrates the proportional area of production forest working groups on the DRMF. Spruce forests occupy 205,792 ha (30%) of the productive

[5] Source Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report (2005).
[6] Ibid.

forest landbase. Spruce occurs on both upland and lowland sites. Jack pine forest types occur in mainly homogenous stands covering 104,364 ha (15%). Poplar forest occupies 120,850 ha (18%) of the Crown managed productive forest areas. Poplar grows in pure stands or in mixtures with other species. White birch forests occur on 38,574 hectares. Balsam fir occurs throughout the Forest, typically in mixed wood stands on moist mineral soils (56,459 ha). It has been repeatedly attacked by spruce budworm which resulted in severe damage or mortality to trees occupying dominant or co-dominant crown positions.

One notable area of predominantly old growth white pine characteristic of the transition zone is located adjacent to Greenwood Lake. The area has been designated as a conservation reserve for educational and scientific purposes.

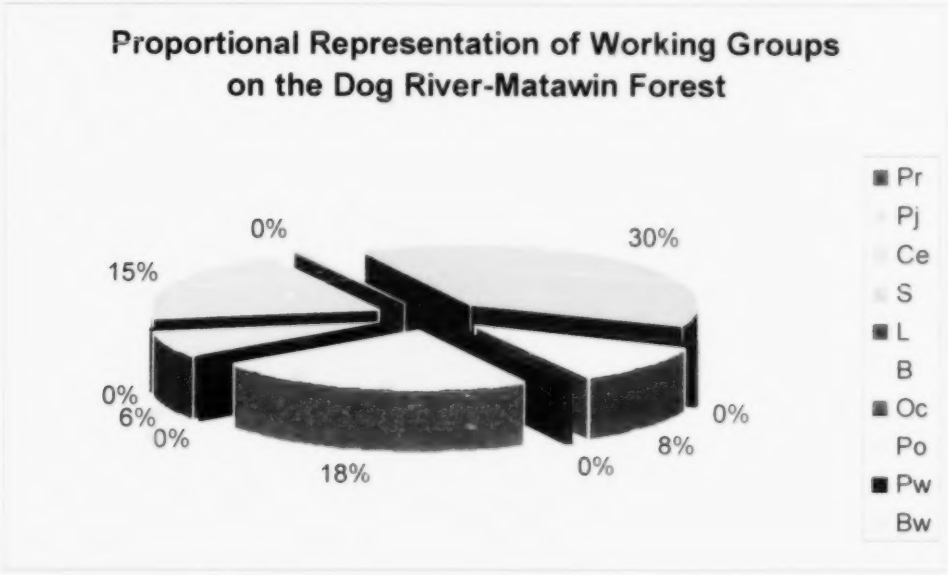

FIGURE 3. PROPORTIONAL AREA OF WORKING GROUPS - CROWN MANAGED PRODUCTION FOREST

Figure 4 illustrates that the age class distribution for the managed productive forest has a relatively large amount of area in the 1-20 year age class, and a shortfall in the 41-60 year age class. The large amount of area in the 1-20 year age class is attributed to natural and man-made disturbances that occurred over the last twenty years. The age class imbalance, declining wood supplies, and a requirement to allocate younger age classes for harvesting posed planning and operational challenges to forest managers. Age class imbalances also affected wildlife habitat supply on the Forest.

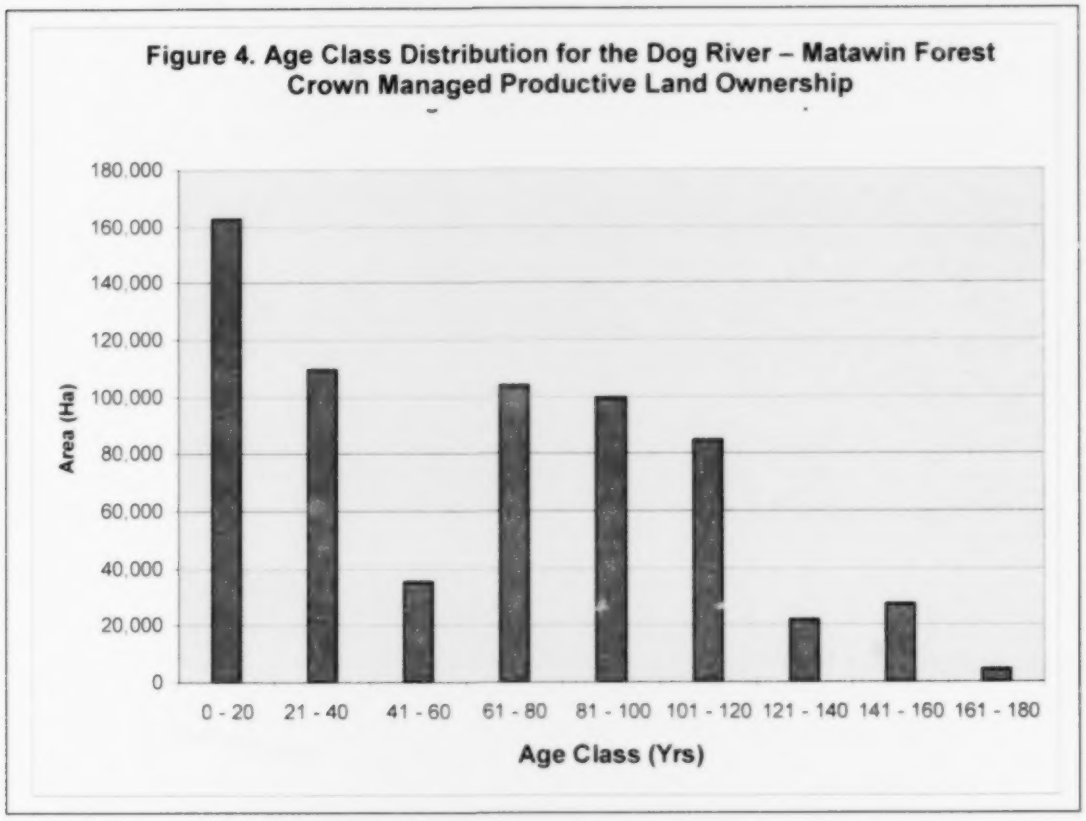

FIGURE 4. AGE CLASS DISTRIBUTION FOR THE DOG RIVER – MATAWIN FOREST

2.2.3. FOREST MANAGEMENT ISSUES

The following section briefly summarizes significant forest management issues as identified in the 2000 FMP.

Forest Fragmentation:

Past harvesting operations on the Forest were influenced by the application of the moose guidelines. This resulted in a relatively high proportion of smaller-sized harvest blocks. The preponderance of smaller harvest blocks benefited moose habitat, but may have been detrimental to marten habitat due to increased forest fragmentation. The fragmented nature of the Forest also resulted in instances where younger age stands were allocated for harvest where they occurred adjacent to, or within, targeted older age class allocations. Operationally, it was practical to allocate these areas with the adjacent targeted allocations.

Operational Issues:

The creation of future core marten areas (by the allocation of larger blocks for harvest), required the allocation of younger age classes (61-80, 81-100) for harvest. Age class imbalances posed operational planning challenges where younger age stands were allocated for harvest due to their proximity to operable areas. The preponderance of 61-80 and to a lesser extent, 81-100 age class growing stock in the southeast corner of the Forest, required the allocation of a significant proportion of timber in the 61-80 and 81-100 age classes in order to meet fibre requirements.

Hardwood Utilization:

Concerns existed with respect to the marketability of overmature timber, particularly within the birch and poplar working groups. During past Timber Management Plans, hardwood utilization targets (particularly for birch and to a lesser extent poplar) had not been met, despite Bowater requirements and Ministerial commitments.

Road Use:

Due to its proximity to Thunder Bay, access issues related to the maintenance of roads, planned road locations, and access concerns in the areas adjacent to Quetico Park all had to be addressed in the FMP.

Planned vs. Actual Volume Returns:

Historically, actual volume return in conifer forest types had been below planned volumes.

Long Term Wood Supply:

With the development of successive management plans, wood supply has become more constrained. Wood supply issues are compounded by forest fragmentation, age class imbalances, utilization issues and the level of existing supply commitments.

3.0. SUMMARY OF AUDIT FINDINGS

3.1. COMMITMENT

Corporate commitment to forest sustainability should be reflected in an organization's vision, mission, and policy statements. These statements and

policies provide guidance for the organization and should be reflected in day-to-day operations.

Bowater has a specific Thunder Bay Forestry Policy that commits it to "*...implementing environmental management systems with a goal of sustainable forest management that balances ecological, economic and social forest values*". Some specific goals include adherence to applicable legislation, the development of ecologically based forest management plans, involvement of forest stakeholders in decisions, ongoing research, and development and the use of best management practices. The Thunder Bay Woodlands Operation received Sustainable Forestry Initiative (SFI) 2002-2004 Certification of Verification in January, 2005 and International Standards Organization (ISO) 14001:1996 Registration, in February, 2003. Company publications specifically reference the protection of non-timber values, cultural heritage values, and a commitment to developing working relationships with First Nation communities.

There was a Employee Handbook that was regularly updated (most recent February 2005) and contained a synopsis of the various elements of its Environmental Management System (EMS) policy The Handbook contained a revisions page that listed the most recent additions and updates to forest management policies and directions, and an updated list of Threatened and Endangered Species.

Our review of records and interviews with company staff revealed that policy statements met IFAPP requirements, were widely distributed and understood by employees.

OMNR management guidelines and strategies for forest management on the DRMF were contained in the District Land Use Guidelines and Ontario's Living Legacy (OLL) Land Use Strategy. Further sustainable forest management directions were contained in the OMNR's Statement of Environmental Values, the *Policy Framework for Sustainable Forests*, and the policy statement "*Beyond 2000*". This statement was updated in February 2005 and called "*Our Sustainable Future*".

We concluded that the Thunder Bay OMNR had complied with OMNR policies and directions associated with forest sustainability, and staff had been provided with necessary training and information.

3.2. PUBLIC PARTICIPATION

3.2.1. Local Citizens' Committee

The FMPM requires that a Local Citizens Committee (LCC) be established to help the forest management planning team prepare the forest management plan. Membership on the LCC is to include local citizens representing a range and balance of community interests. LCC responsibilities include ensuring the effectiveness of public consultation, assisting with the identification and analysis of management alternatives, participating in the development of values maps, monitoring the implementation of the plan, and providing advice to the District Manager (DM) on plan amendments and issue resolution. Each forest management plan must contain a LCC general statement of agreement or disagreement with the plan.

We interviewed LCC members, and reviewed the minutes of meetings for the audit period to determine the involvement, and effectiveness, of the committee in the forest management process.

The LCC was established by the District Manager (DM) under the 1996 FMPM and was in place for the development of the 2000 and 2005 FMPs. The LCC Terms of Reference (TOR) were being updated to conform with the 2004 FMPM during the audit period. Membership on the LCC included representation of the range and balance of interests from local communities, including First Nations. A LCC representative was a member of the FMP planning team for preparation of both FMPs.

2000 Forest Management Plan:

Our review of LCC agendas and minutes determined that monthly meetings included a range of topics and discussions reflective of the various members' interests. Bowater and OMNR representatives provided timely responses to issues. The FMP Contributors Page identified LCC members and alternates. A LCC statement indicating support for the plan was included at the beginning of the FMP, and the committee's report was included in the supplementary documentation. The LCC was involved in the discussions leading up to the 2000 FMP information centers, and some members attended the sessions.

The LCC was involved in the development of values maps, and received information on the identification of management alternatives via presentations at scheduled meetings. Members did not directly contribute to the analysis of management alternatives; rather the alternatives were presented and explained by the Plan Author. Members had the opportunity to ask questions. Given the complexity of the analysis of alternatives, we concluded that this was an acceptable approach, and interviewed members were satisfied with it.

The LCC was routinely involved in making recommendations (e.g. classifying amendments), and was involved in on-going public issues with respect to the plan implementation. Members were informed of public notices (e.g. spraying) at LCC meetings or via mail in advance of the activity. It was provided with the opportunity to review the Selected Management Alternative (SMA) prior to its approval by OMNR.

A "bump up" request (February 2000) regarding a number of perceived sustainability issues on the Forest was rejected by the Minister of the Environment. The LCC was aware of the issue, but the District Manager did not specifically seek its advice. Due to the nature and timing of the "bump-up" request, we felt the approach by the DM was appropriate.

Interviews with individual LCC members, and a meeting with the full LCC, revealed that members were generally satisfied with the 2000 FMP planning process and the conduct of their regularly scheduled meetings.

The Thunder Bay District Manager, and other OMNR staff, felt that the LCC had generally met its purposes, as outlined in the FMPM. They acknowledged, however, that the TOR were not fully adhered to, and that most LCC members did not have the time, training or experience to complete the required tasks. We determined that the DM was actively seeking ways and means to increase the effectiveness of the committee and that corporate OMNR is producing new training material to assist LCCs deliver their mandates. For these reasons, we do not provide a recommendation to address this identified concern.

The 1995 – 2000 Independent Audit recommended that OMNR staff should not be active members of the LCC, and that recommendation was implemented. The LCC also responded to the 1995 Audit by developing a protocol to reduce the number of administrative amendments that it dealt with.

With the exceptions noted above, we conclude that the operation of the LCC with respect to the 2000 FMP met FMPM requirements.

2005 Forest Management Plan:

A review of the 2005 FMP LCC agendas and minutes, interviews with individual LCC members, and a meeting with the full LCC revealed that members were very dissatisfied with the 2005 planning process.

Members expressed concerns about the lack of information, on-going delays, and inadequate public notification with respect to the development of the plan. They informed us that there were numerous disputes, and increasingly acrimonious relations between Bowater and OMNR planning team members. Committee members felt that the Plan Author did not effectively manage the

planning process. Minutes of meetings reveal that LCC members were dissatisfied with delays, were seeking additional information, and, at times, felt pressured to respond to issues without complete information. The members felt that they were not adequately consulted, and that the public participation process did not meet FMPM requirements. Interviews with OMNR and Company staff confirmed many of the issues identified by the LCC.

LCC members indicated that they felt pressured to make decisions without the time or information to fully understand the issues. For example, the September 14th, 2004 minutes indicated a need for the LCC to provide a statement regarding agreement or disagreement with the draft plan that was scheduled to go to the public on October 26th. The LCC refused to provide the statement because members had not seen the draft plan. The Plan Author agreed to provide the members with copies. However, as of October 12th the issue remained unresolved. At the next meeting, examples of LCC endorsement statements were handed out to the members. A statement of agreement was ultimately produced. Our interviews revealed that members did not fully understand what they were endorsing. As discussed in Sections 3.3.1. and 3.3.8. the Selected Management Alternative (SMA) they endorsed was not the one eventually approved by the OMNR. We determined that the LCC never did have an opportunity to review or endorse the SMA in the approved plan.

We conclude that the LCC was not provided with the appropriate time and information to effectively contribute to the 2005 FMP process, or to develop the understanding and group consensus necessary to effectively contribute to the management planning process. We provide the following recommendation to address this finding.

Recommendation # 1:

The OMNR Thunder Bay District Manager should ensure that the LCC is provided with adequate time, and all information necessary to fully comprehend, properly discuss, and develop committee consensus to meet its obligations in the preparation of future forest management plans.

3.2.2. FMP Standard Public Consultation Process

The FMPM requires that public consultation opportunities be provided during the forest management planning process. These opportunities are to include an invitation to participate in the planning process, two public information centres, review of the draft plan, and inspection of the approved plan. The public has an opportunity to request a Ministry of Environment and Energy (MOEE) "bump-up" of a specific proposed forest management activity.

We examined the standard public consultation process with respect to the development of the 2000 and 2005 FMPs.

2000 Forest Management Plan:

During the preparation of the 2000 FMP, the Invitation to Participate, Notice of the First Information Centre, Notice of the Second Information Centre, Notice of Draft Plan Review, and the Notice of Plan Inspection complied with FMPM requirements. The public was provided with opportunities to identify issues. Stakeholders were informed of the OMNR issue resolution process.

We determined that Environmental Registry notices of the planning process were issued as required, and opportunities for an individual environmental assessment were contained in the public notices. One Environmental Assessment Act "bump-up" request was received by the Ontario Ministry of the Environment (MOE). Following review the Minister decided that an individual environmental assessment was not warranted.

2005 Forest Management Plan:

Many components of the 2005 planning process, including public consultation, were unusually controversial and complex. The following provides a brief chronology of events leading up to the approval of the 2005 FMP.

- The Invitation to Participate was delayed 3 times (March 31, May 20, and June 30, 2003) before proceeding on July 25, 2003.
- The 1st and 2nd Information Centers were delayed (October 6 to December 3-4, 2003 and April 12 to May 25-26, 2004).
- The Draft Plan submission to the OMNR was August 27, 2004.
- Public Review of the Draft Plan was also delayed ((July 27 and occurred on October 26, 2004).
- Up to December, 2004, OMNR provided Bowater with required alterations generated from internal review and comments received at the 3rd Information Center.
- The OMNR Regional Director was briefed on the Draft Plan on January 17, 2005.
- Bowater made the Final Plan submission to OMNR on January 24, 2005. It was not approved and alterations were requested.
- During February 2-7, 2005 the OMNR determined that Bowater had not dealt with the required alterations, including the fact that OMNR deemed the Selected Management Alternative as not sustainable (Alternative # 5).

- Senior OMNR and Bowater staff met on February 11, 2005. OMNR informed Bowater that the submitted Plan would not be approved. At that time a decision was made to undertake additional analysis and prepare additional alternatives.
- Over the next few days OMNR and Bowater staff developed a new Selected Management Alternative (SMA # 6).
- There was a Final Plan re-submission on February 20, 2005. There was no public consultation on the new SMA and the revised Final Plan. Additionally, there was no update to the EBR Registry Proposal File.
- The following day, February 21, 2005 the OMNR approved the 2005 Plan.
- Three days later on February 24, 2005 the OMNR District Manager sent a letter to Bowater documenting;
    - the rationale for not approving the original Plan recommended by the Plan Author.
    - the development and approval of the new SMA (# 6).
    - the OMNR rationale for not undertaking additional public consultation.
- The Plan was available for Public inspection from February 22 to March 23rd.
- Operations commenced on April 4, 2005.

As discussed in Section 3.3.1., the deliberations of the planning team became increasingly acrimonious. This circumstance, coupled with other factors (e.g. model and guideline interpretation, missed planning deadlines, discussions of mandate), contributed significantly to delays in the public consultation schedule and the planning timetable.

There were four deferrals of the date for issuance of the public Invitation to Participate. Planned target dates for the 1st and 2nd Information Centres were not achieved. Our document review revealed public concern about inadequate notice for the invitation to participate in the 2nd Information Centre.

Following public review of the Draft Plan, the OMNR did not approve the Final Plan as submitted by the Plan Author. The management alternative selected by the Plan Author and the planning team (Alternative # 5) was deemed to have significant shortcomings with respect to sustainability. In a list of required alternations submitted to Bowater the rationale given by OMNR for its rejection of the FMP was that:

"...repeated failures of sustainability at both the sub regional and eco-regional levels in conjunction with a number of other shortcomings, as identified in the list of required alterations, submitted to Bowater February 7 ,

2005, were sufficient cause to deem the submitted (Jan 24, 2005) "... final plan unapprovable."

As a result of this decision, OMNR and Bowater developed a new Selected Management Alternative (Alternative # 6), and the FMP was subsequently approved (February 21, 2005).

OMNR also decided that the new SMA would not be submitted for public review. The rationale for this decision was stated as follows:

"...there were no changes to the selection of areas of operations and that the new SMA resulted in acceptable achievement of both social and environmental goals." and "...the fact that there were no changes to operations, objectives, or strategies made the need for a revised statement questionable as there would be no change of impact to the stakeholders of the forest".

It is our opinion that the public, the full planning team, and the LCC should have been provided an opportunity to comment on the new final plan including the new SMA (Alternative # 6). Our rationale for this conclusion is as follows:

1. OMNR rejected the draft plan's SMA as unsustainable, and created a new SMA with significant changes to the long-term strategic direction of the forest.
2. The public's review at the 1st and 2nd Information Centres and the review of the Draft Plan were for a SMA which was ultimately deemed unsustainable, and subsequently altered in the approved plan.
3. The purpose of the Stage Two – 1st Information Centre is to provide a formal opportunity for public review of, and comment on, the analysis of management alternatives, and the preliminary preferred management alternative. The SMA is the principal component of the FMP.
4. The LCC was not involved in the creation or review of the new SMA. The FMPM states that *"... the forest management plan will be prepared in an open consultative fashion".*

The Plan Author expressed concerns to the auditors about certifying the FMP with Alternative #6 as the SMA, and questioned the OMNR decision not to submit the new SMA to public review. It is our conclusion that the public should have been notified that the SMA had changed and been provided with and opportunity to review and comment on it. The following recommendation is provided.

Recommendation # 2:

For the 2005 FMP, the OMNR District Manager should immediately;

1) Review the approved plan and the SMA with the LCC.

2) Correspond with individuals and organizations on the FMP mailing list to:

- Explain the rationale for the rejection of the original SMA.
- Identify the changes associated with the approved SMA
- Invite the public to review and comment on the approved SMA.

3) Provide the public with the opportunity to comment by means of a posting on the Environmental Registry.

3.2.3. Native Peoples' Consultation

The FMPM requires that native communities have the option to choose an additional consultation and documentation opportunity with respect to forest management planning, referred to as the Forest Management Native

Consultation Program (FMNCP). In addition, OMNR District Managers are required to conduct negotiations with native communities to identify and implement ways of achieving more equal participation by Aboriginal peoples in receiving benefits from forest management.

Invitations to participate in the 2000 and 2005 forest management planning processes were sent to the Lac des Mille Lacs and Fort William First Nations. The invitations included an offer to utilize the FMNCP or the standard public consultation process. We confirmed that the communities were informed of the planning schedules and the location and dates for the Information Centers, the Public Review of the Draft Management Plan, and the approved Management Plan.

The Fort William First Nation elected not to formally participate in either the 2000 or the 2005 planning process. Individual band members participated through the standard consultation process. The Lac des Mille Lac First Nation initially elected not to formally participate in the 2000 planning process. However, early in the audit period it did indicate a desire to become more involved and representatives were designated to speak on its behalf. A Native Background Report was prepared. Band representatives met with Company and OMNR staff to become involved in forest operations and specifically, to input into the 2005 planning process. In December 2003, a band representative joined the 2005 planning team.

For the 2005 FMP, a Native Background Information Report, and a Report on the Protection of Identified Native Values, were completed for Lac des Mille Lacs First Nation. Band representatives informed us that the OMNR and the Company were prepared to listen to First Nation concerns and work with the Band to increase their involvement in activities on the Forest. For example, Bowater participated with Confederation College in the delivery of a Junior Ranger Program for First Nation youth to provide education and employment opportunities in forest management. This program had an annual enrolment of approximately thirty participants.

Records and interviews indicated that the Company had regular contact with band representatives, and a number of employment and training opportunities were provided. During the audit period, Bowater entered a business-to-business arrangement with the Band for the harvest of 150 hectares, and Band members participated in Bowater EMS training.

Band representatives informed us that they had a good working relationship with the OMNR and had been made aware of potential educational, training and employment opportunities. We concluded that OMNR substantially met Environmental Assessment (EA) Condition 77 with respect to providing increased opportunities for First Nations for forestry employment and involvement in the forest management planning process.

3.2.4. Annual Work Schedule Public Inspection

Annual Work Schedules (AWS) must be prepared and approved prior to the commencement of operations. The AWS lists operations which were planned and approved in the forest management plan and that are scheduled for implementation that year. OMNR staff must ensure that they are complete and consistent with the FMP. The LCC inspects the AWS and the approved schedule must be available for public inspection.

Notices for Annual Work Schedules (AWS) for the 2000 FMP were issued by mail to stakeholders, and posted in local newspapers 15 days prior to the commencement of operations. Separate herbicide treatment notices were issued, and LCC members were made aware of aerial herbicide programs through their review of the AWS.

We conclude that requirements with respect to AWS's were met.

3.3. FOREST MANAGEMENT PLANNING

3.3.1. PLANNING TEAM ACTIVITIES

The FMPM requires that the District Manager must appoint a planning team. The team is chaired by the Plan Author who must be a Registered Professional Forester (R.P.F). The planning team must represent a wide range of natural resource expertise. A Terms of Reference must be developed by the Plan Author and approved by the OMNR District Manager. It must identify all the tasks required for the preparation of the plan and identify the responsibilities of all planning team members.

2000 Forest Management Plan:

A multi-disciplinary planning team was established for the 2000 FMP and a Terms of Reference (TOR) was approved by the District Manager. The Plan Author was a Bowater employee and a Registered Professional Forester.

Formats and timelines for planning and review were set as per the FMPM requirements and the plan was approved in time for operations to commence on April 1st, 2000.

The Planning Team communicated with the public through the use of notices, (i.e. newspaper ads, mail outs) and meetings with concerned individuals. All stakeholders we contacted felt they had sufficient notice and opportunity to participate in the 2000-2005 plan.

2005 Forest Management Plan:

For the 2005 FMP a multi-disciplinary planning team was established. Bowater contracted the plan preparation to a consulting firm. The Plan Author was a Registered Professional Forester.

The DM, the LCC and individual planning team members informed us that they felt the 2005 forest management planning process was critically flawed. A review of planning team minutes, and interviews with the Plan Author and planning team members revealed there was disagreement with respect to the use of the Forest Simulation and Optimization System (FSOS), as opposed to the provincially approved Sustainable Forest Management Model (SFMM). This dispute resulted in the delayed approval of the planning team TOR and delays in the initiation of public consultation.

There were also disputes relative to the role of OMNR staff as planning team members vs. their role as regulators, and the role of the FMP Steering Committee[7].

Additional conflicts within the planning team were well documented in minutes of meetings and other documents. These conflicts included:

- Late delivery of products and missed timelines.
- Disagreement over desired wood and marten habitat supply.
- Disagreement over the implementation of marten guidelines.
- A lack of decision-making.

Following interviews and record reviews our assessment is that the planning process for the 2005 FMP was hampered by fundamental philosophical differences characterized by;

- An industry position that marten and marten habitat was less at risk than jobs in the industry.
- An OMNR position that marten habitat was significantly at risk due to the cumulative effects of past forest management practices.

The fact that the draft FMP was rejected by the OMNR as "unsustainable" after being submitted by the Plan Author, with planning team and LCC concurrence, is indicative of a failure to resolve these fundamental differences. Despite the checks and balances in the forest management planning process, this FMP did not adhere to all FMPM requirements, and progressed to the final stage of development before major sustainability concerns were addressed.

To address shortcomings in the forest management planning process corporate OMNR has completed a "Forest Management Implementation Review". Four key actions are being implemented:

- The establishment and operation of a steering committee for each forest management plan.
- The appointment of a project manager to oversee the production of each forest management plan, plus implementation of project management techniques to ensure timely plan production.

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[7] A Steering Committee was established to assist in the delivery of the forest management planning process.

- The implementation of a mandatory review when forest management plans are not prepared and approved according to the agreed upon schedule resulting in the need for contingency plans.
- The provision of a coordinator to review proposed required alterations to draft forest management plans.

It is our view that these actions will help rectify the serious issues identified with the 2005 planning process and therefore we do not provide a recommendation.

3.3.2. Resource Stewardship Agreements (RSAs)

RSAs are business agreements negotiated between the forest industry and tourist operators. RSA policies came into full effect for 2004 forest management plans.

The 2000 FMP contained an objective specifically related to support for the resource based tourism industry. It also contained an analysis of the impacts of the plan based on the "*Management Guidelines for Forestry and Resource-based Tourism*". During the plan term, Bowater had negotiated a number of agreements with individual tourist operators that adjusted access and harvest to protect specific tourist operations. Interviews with tourism and company led us to conclude that the agreements were effective.

For the 2005 FMP, Bowater entered into discussions with several tourism operators for RSAs, but at the time of plan approval these agreements remained in draft form. Bowater staff attributed the lack of progress on the RSAs to a corporate focus on meeting FMP timelines.

Suggestion # 1:

Bowater should finalize existing draft Resource Stewardship Agreements with tourism operators within 12 months of the submission of this audit report.

3.3.3. Source of Direction

Documents which provide context and direction for the preparation of the forest management plan must be made available to the planning team and the LCC at the outset of planning.

For the 2000 FMP, a list of manuals, guidelines, policies, directives and administrative procedures was made available to the planning team, and were listed in the planning team Terms of Reference. The forest management plan objectives were prepared in accordance with FMPM requirements, and addressed forest diversity, sustainable social and

economic benefits, silviculture, and the provision of forest cover. Management objectives were established within the context of broader direction in legislation, policy, regional strategic direction, local land use, and resource management direction. Similar sources of direction were used for the 2005 FMP process.

In our opinion all requirements were met for both FMPs.

3.3.4. Introduction

The 2000 and 2005 FMP introductions contained properly prepared and signed statements of how OMNR's Statement of Environmental Values (SEV) was considered in plan preparation. As required, an index to the environmental assessment components of each plan was included.

3.3.5. Management Unit Description

The description of the Forest for the 2000 FMP met the requirements of the FMPM. The Forest description tables adhered to required formats, and included information about the administration, geology, current forest condition and other forest resources. Social and economic information was provided. An estimate of landscape processes for net primary productivity and water yield was provided.

The Forest Resources Inventory (FRI) was based on 1976 data updated to April 1st, 2000. The updates included changes due to harvest, natural depletions occurring since 1995, and the additions of free-to-grow areas. FRI volume estimation was problematic in older mixed wood stands as there was a general concern that actual stand ages were misrepresented, and yield predictions were higher than actual returns. A new inventory was undertaken for the 2005 plan, and efforts were made to address the identified shortcomings through sampling design, independent review and the collection of additional data (e.g. permanent sample plots).

Demographic profiles were produced for Dryden, Red Lake, Sioux Lookout, and Thunder Bay. The analysis showed that forest management activities including harvest, silviculture, and wood manufacturing were all major activities that provided significant value to each of the identified communities. The profiles were used to identify the socio – economic impacts expected from forest management operations for each of the management alternatives.

A full review of values information was included in the FMP public participation processes, and opportunity was provided for the public to provide additional information. The FMP and supplementary documentation contained lists and descriptive text specific to regionally featured wildlife species.

We determined that values maps were updated on a continuing basis, and that the Forest had been aerial surveyed for some species prior to the start of the planning process. Through record review and interviews, we determined that values data and values maps were made available to Bowater for the preparation of the FMP.

3.3.6. Objectives and Strategies / Management Alternatives

Through the FMP process, long term strategic direction for the Forest and objectives for forest management are determined by examining forest policies, strategic land use documents, legislation, resource issues, the current state of the forest, benefits expected from the forest, and the protection of forest values. These objectives are used to create management alternatives which are compared to determine forest sustainability and the provision of benefits (e.g. employment, wood fibre). Required FMPM objectives include:

- Forest diversity.
- Social and economic.
- Provision of forest cover.
- Silviculture.

We reviewed the FMPs, associated documentation and minutes of meetings and interviews were conducted with the Plan Author, OMNR and company representatives, planning team and LCC members, and First Nations representatives. Resource model outputs (e.g. SFMM, SEIM) were examined for the 2000 FMP.

2000 Forest Management Plan:

Each FMP objective had associated targets and strategies. Management alternatives portraying various circumstances and sets of management objectives were completed. Eight management alternatives were developed. These included two natural benchmark scenarios (with and without fire suppression), three mandatory alternatives required by the FMPM (1996), the Selected Management Alternative (SMA) which provided an even flow of timber over time while providing for marten habitat, and two variations of the SMA which attempted to minimize impacts on marten habitat, and model the effects of prohibiting harvest within all riparian areas.

The detailed evaluation and comparison of management alternatives included an assessment of forest sustainability where the results of forest modeling were assessed against measurable indicators of sustainability and other quantifiable objectives at 20-year intervals for a period of 100 years.

Our review indicated that the outputs from the Sustainable Forest Management Model (SFMM) supported the analysis of management alternatives and the sustainability goal. Although none of the alternatives could provide steadily increasing hardwood volumes over time, the SMA did the best job of maintaining an even flow of timber in the medium term. Alternative # 6 was the SMA and judged by the planning team to provide the best balance of all plan objectives. However, we had concerns about some of the implications of the selected alternative on long-term forest sustainability. These concerns included;

- Younger than normal age classes allocated for harvesting to meet wood demand.
- Forecast harvest volumes exceeding the projected available volume.
- A reduction of preferred marten habitat from 200,000 ha to 80,000 ha over forty years (although followed by stable levels).
- SFMM modeling forecasted a significant reliance on intensive renewal whereas the FMP document forecasted less use of intensive silviculture.

However, field inspections, the review of the Comparison and Trends Analysis Report, and the Report of Past Forest Operations mitigated some of these concerns. Forest sustainability is more fully discussed in (Section 3.7.4).

In our view, the assumptions used in SFMM for the development of yield curves, natural succession pathways, and succession rates were all reasonable. The model appropriately identified proportions of volume to be left unharvested to reflect the harvest method, and un-utilized tree species left on site (e.g. CLAAG). Forecast post-renewal conversion outcomes were reasonable for the majority of forest units and silvicultural intensities. Conversion rates of 1% to 2% of harvested area to roads and landings were adopted to reflect the active management of roadside slash accumulations (e.g. piling).

No age class structure / retention targets were established for mature / over-mature forest by forest unit or forest unit group as this was not a planning requirement at the time of plan preparation.

Values in the SFMM Average Annual Renewal Schedule forecast a mix of approximately 22% extensive, 27% basic and 51% intensive renewal operations. However, the FMP forecasts a mix of 43% extensive, 25% basic and only 32% intensive activities. This suggested a greater reliance on extensive renewal operations at the expense of intensive operations. Although we did not expect these percentages to align perfectly due to the treatment of areas harvested in the previous term, the forecast imbalance is

troubling, and could potentially compromise the implementation of the SMA. As a result, a recommendation is made.

Recommendation # 3:

Bowater should ensure that the forecast of silvicultural operations contained in the FMP approximates the mix of silvicultural intensities prescribed in SFMM for the next planning period.

2005 Forest Management Plan:

As discussed, in Section 3.2.2. and Section 3.3.1., we concluded the 2005 forest management planning process was ineffective.

Issues included:

- The introduction and use of a supplementary harvest scheduling model (i.e. FSOS) that indicated a greater available wood supply than SFMM.
- Disagreement with respect to the approval and use of the FSOS model in relation to the Ministry approved SFMM model.
- OMNR determination that the analysis and rationale supporting the selection of the management alternative in the final plan (submitted by the Plan Author on January 24, 2005) was inadequate.
- OMNR concerns about several analytical components of the plan, including completeness of the marten analysis, and the quality of the natural benchmark against which other alternatives were compared.
- OMNR determination that the final plan submitted by the Plan Author (January 24, 2005) failed the test of sustainability.

We conclude that the planning process resulted in poorly developed objectives and strategies /management alternatives. A related recommendation is provided in Section 3.3.1.

Generally, we are concerned about the long-term sustainability of the DRMF. There has been a trend of over-estimating predicted stand yields (Section 3.4.2), and with the development of successive management plans, wood supply has become more constrained. The 2005 FMP retains a similar level of harvest as the 2000 FMP (with a reduction of harvest levels 20 to 50 years in the future). There is a continued deferral of a harvest reduction in anticipation that future models, improvements in the forest inventory, and new knowledge will result in additional wood supply being identified. While we understand the critical social and economic issues that are at play with respect to the DRMF, we believe this is a precarious assumption.

The ultimate decision with respect to forest sustainability and the balance between socio-economic issues and non-timber values requires full public involvement as required by the CSFA. We have provided a recommendation in Section 3.3.1. to bring this issue under public inspection and discussion.

3.3.7. Operational Planning

Operational planning selects areas for harvest, tending, and renewal operations for the five-year term of the forest management plan. Preferred silvicultural treatment packages and the silvicultural ground rules are identified and prescriptions to protect specific values are developed through Area of Concern (AOC) planning. Locations of new primary and secondary road corridors are determined.

For the 2000 FMP, we interviewed the Plan Author, planning team members, LCC members, and Bowater and OMNR staff. Planning team minutes, supplementary documentation, silvicultural guides, forest operations prescriptions (FOPs), wood supply commitments, compliance plans, values maps, and the FMP were examined.

We determined that adequate information was available for AOC planning. Planning of AOCs included alternative methods of operations where required by the FMPM. Record reviews indicated that planned harvesting and renewal and tending activities reflected the values attributed to the AOC. Specific prescriptions were developed to protect the value.

The FMP contained a detailed section on monitoring and assessment which included provisions for monitoring operations in AOCs, a description of monitoring methods used to determine the effectiveness of any exceptions, and a description of the program for assessment of regeneration success. We determined that prescriptions properly reflected specific site conditions and AOCs were clearly identified on maps. The List of Exceptions at the front of the FMP included clearcuts exceeding 260 ha (that did not require a monitoring program) and a provision for travel through an osprey nest AOC. The required documentation for a monitoring program was in place.

The Silvicultural Ground Rules (SGRs) were developed according to appropriate guidelines. The *Silvicultural Treatment Package* (STP) represented the range of acceptable types of harvest, and renewal and tending treatments for the appropriate forest unit. Each STP included the silvicultural system, the harvest method, the renewal, and tending treatment and the regeneration standards and targets.

The planning documentation for roads met the requirements of the FMPM. The locations of primary, secondary, and tertiary roads were determined.

Specific locations for crossings of AOCs, as well as conditions on tertiary roads were established.

We conclude that FMPM requirements for operational planning were fully met.

3.3.8. Plan Review, Approval

The FMPM requires that the draft FMP must be submitted for OMNR and public review, and alterations required by the OMNR must also be made available to the public. The draft and final plan must be certified by the Plan Author, and the final plan must be certified by the OMNR District Manager and approved by the OMNR Regional Director.

2000 Forest Management Plan:

The FMP included all appropriate certification and approvals. The FMP was approved on January 14th, 2000, enabling forest operations to commence on April 1st 2000.

2005 Forest Management Plan:

The 2005 forest management planning process was characterized by an inefficient planning process, failure to meet FMPM requirements, and inadequate public consultation[8] (discussed in Section 3.3.1).

In October 2004, following a review of the Draft Forest Management Plan, the OMNR documented the following concerns:

- Heavy reliance on increased harvest levels from proposed commercial thinning.
- Little or no assessment of sustainability for the management alternatives.
- No stakeholder consultation for some affected stakeholders.
- Improper application of AOC prescriptions.
- Inadequate rationale for management decisions made during plan production.
- Some components of the FMP were produced after draft plan submission.

[8] See also Table 2. "Chronology of Public Consultation, Plan Approval and Related Issues for the 2005 FMP", Section 3.2.2, which documents planned vs. actual planning timelines and related planning issues.

In February 2005, OMNR made a decision to not approve the 2005 "final plan" submitted (January 24th, 2005) by the Plan Author. OMNR determined that the final plan had:

"... six of the wildlife habitat indicators associated with mature conifer forests falling well below the lower bound of acceptable levels for 50 to 70 years.."

and that;

" the submitted FMP failed a number of tests of sustainability ..."

and further that;

"...repeated failures of sustainability at both the "sub regional and eco-regional levels in conjunction with a number of other shortcomings as identified in the list of required alterations submitted to Bowater February 7, 2005 were sufficient cause to deem the submitted (January 24th, 2005) 'final plan' un-approvable".

While we are concerned that the FMP progressed to the final stage of development before major concerns were addressed, the decision to not approve it was in keeping with OMNR's responsibility as outlined in the CFSA; specifically, *"...the Minister shall not approve a FMP unless satisfied that the plan provides for the sustainability of the forest".*

As a result of this decision, OMNR and Bowater undertook an additional analysis. A February 24th letter from OMNR to Bowater stated that; *"There has been agreement between MNR and Bowater on a revision to the selected management alternative that retains a similar level of harvest during the first ten year term but alters the amount available for harvest 20 to 50 years in the future".* The letter further states that the *"...new management alternative improves the availability of preferred habitat when compared to the previous selected management alternative..."*

The FMP, including the new Selected Management Alternative (Alternative # 6), was subsequently approved (February 21, 2005).

There is conflicting opinion between OMNR and Bowater regarding the degree of involvement of the planning team and the Plan Author in the creation of the new SMA (Alternative # 6). The Plan Author disagreed with OMNR's decision to reject the final plan and the creation of a new option.

The final plan included the approvals and signatures of the Bowater Woodlands Manager, the Thunder Bay District Manager, and the Northwest Regional Director. The final plan also included the signature of the Plan Author (RPF); however, he indicated that his signature was made

conditionally due to his concerns about how the final SMA was created, and the absence of public review.

3.3.9. Plan Amendments

All required amendment processes and procedures were followed and correctly documented for the 2000 FMP. Amendments were certified by an RPF, distributed as required, and listed in the FMP. Over the five years of plan implementation 131 FMP amendments were approved, of which 128 were classified as administrative and three were classified as minor. The amendments were documented in the required master list, and the approvals and public consultation processes were carried out as required. All amendments were circulated to the mandatory locations as required by the FMPM.

A review of the amendments indicated that they included on-going operational issues such as the identification of new values, tertiary roads, and operational planning related to the identification of streams in the field. We determined the amendments were required, and properly addressed unanticipated issues that developed during the plan period.

3.3.10. Contingency Plans

No contingency plans were implemented during the plan term.

3.3.11. Annual Work Schedules

We determined that Bowater had to respond to large number of OMNR conditions, alterations, and comments in submitted AWSs (Table 2). The most significant alterations and conditions were related to concern about the quality of compliance monitoring, elevated harvest levels, and silvicultural effort.

Table 2. Number of AWS Alterations and Conditions of Approval during the Audit Period

Annual Work Schedule	Conditions of approval	Required Alterations (Approximate numbers)	Comments (Approximate numbers)
2000-01	9	50	
2001-02	0	38	
2002-03	4	34	150
2004-04	8	67	150
2004-05	15	100	150

We sampled 20% of the required alterations and concluded that OMNR requests for alterations were appropriate. There was an excessive number of inaccuracies, and a lack of required information in the original submissions. A recommendation is provided to address this finding.

Recommendation # 4:

Bowater must ensure that the information provided in Annual Work Schedules is complete, accurate, and consistent with the FMP.

When finally approved, the Annual Work Schedules (AWS) met the requirements of the applicable FMPM (e.g. signatures, planning for prescribed burns, aerial herbicide projects, and pest management programs).

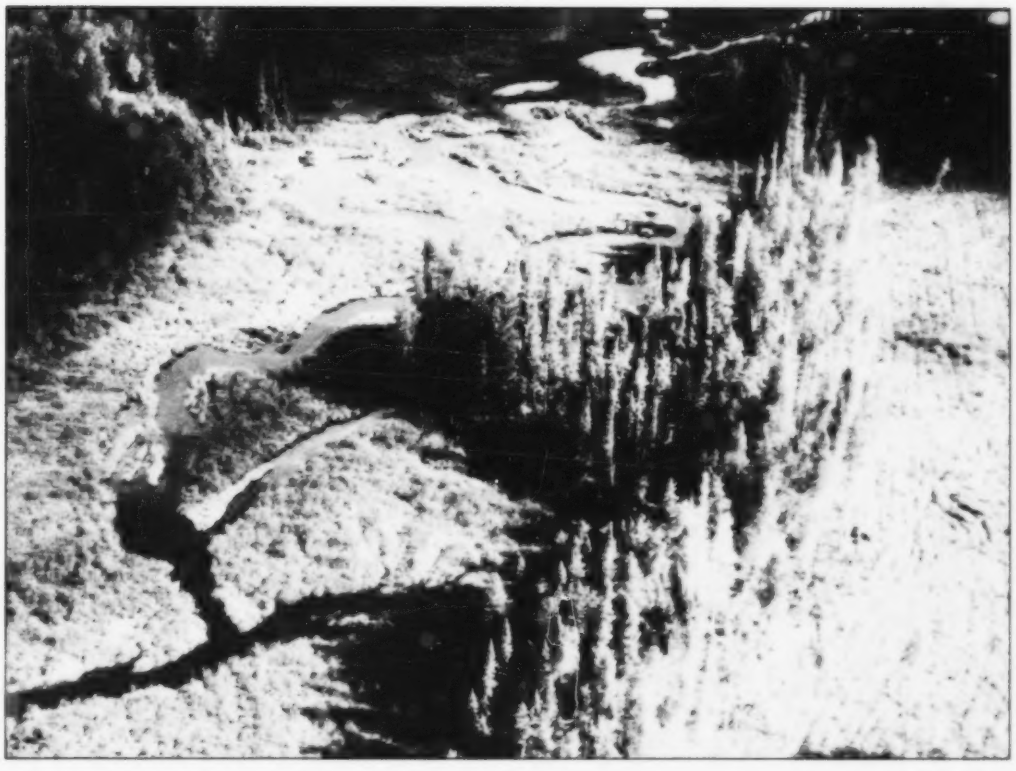
3.4. PLAN IMPLEMENTATION

3.4.1. AREAS OF CONCERN

An Area of Concern is a defined geographic area that protects an identified value. A detailed prescription is developed for the area to prevent, minimize, or mitigate adverse effects of operations on the identified value.

For the 2000 FMP, we reviewed the processes used to identity resource values and the actions taken to protect those values in plan development and field operations. The field audit included an inspection of moose aquatic areas, water crossings, riparian areas, and areas where various wildlife guidelines had been implemented. This was supplemented with a review of AOC prescriptions, values maps and various guidelines in effect during the audit term.

Water crossings were well constructed and in accordance with the appropriate guidelines. The 2000 IFA identified data gaps related to forest cover information for non-managed lands, fisheries information and the analysis of natural disturbance patterns. The 2000 IFA Action Plan Status Report indicated that action on this recommendation has been on-going through the collection of new FRI information, and the routine collection of values information resulting from OMNR surveys. We determined these actions had been taken and values maps were being maintained and updated.



Photograph #1. Application of riparian buffer to protect a watercourse.

A random sample of AOCs across the Forest indicated that prescriptions were consistent with the FMP and AWS and were sensitive to specific site conditions. Record reviews indicated that planned harvesting, renewal, and tending activities reflected the values attributed to the AOC, and included specific prescriptions to ensure protection (e.g. aerial spray buffer adjacent to riparian areas).

There was a significant Not in Compliance (NIC) history of trespasses in AOCs prior to 2000. There was an improvement during the audit period due to compliance training by OMNR and Bowater (Section 3.5.1.), as well as the impacts of Bowater SFI certification (Section 3.1.).

3.4.2. HARVEST

The audit sampled approximately 16% of the planned harvest activities as a primary audit activity and a significant number of inspection sites where harvesting had occurred, but was not the primary audit activity (i.e. planting, tending, and mechanical site preparation sites).

During the audit period, Bowater achieved 88% of its planned harvest area targets. The planned depletion area was 46,704 ha and the area actually depleted was 41,261 ha (Table 4).

Actual harvest volumes recovered during the plan term were 68% of the forecasted planned harvest volumes (planned 7,659,400 m^3 vs. actual 5,197,580 m^3). Reasons for the volume shortfalls included;

- The effects of past budworm infestations.
- The 1976 inventory over-estimated the volume for mixed wood stands.
- Different standards of reporting between OMNR and Bowater due to different reporting of tree tops and small branches and variations in cull factor.
- Operational factors such as the proportion of timber harvested as roundwood (i.e. harvest of roundwood typically yields less volume per hectare than chipping operations).
- Planned volumes being left on allocated blocks.

Table 3 shows a significant shortfall in forecasted vs. actual harvest yield per hectare for the period of 1995-2000 and 2000-2005 of 19% and 23% respectively.

Table 3. Volume and Depletion Area Summary for 1995 - 2005

Plan Term	Harvest Volume		Harvest Depletion		Volume/Ha	
	Forecast	Actual	Forecast	Actual	Forecast	Actual
1995 - 2000	7,259,000	4,548,839	53,797	41,684	135	109
2000 - 2005	7,659,400	5,197,580	46,703	41,261	164	126

Several factors may be contributing to this circumstance, including different standards of reporting between the OMNR and Bowater. The trend could also be indicative of a situation where yield curve volume predictions are much higher that actual volumes realized on the Forest (i.e. a problem with the accuracy of the FRI).

We were informed of problems with the FRI with respect to the characterization of mixed wood stands on the DRMF (i.e. age classification and volume estimates). Bowater is actively addressing inventory issues through;

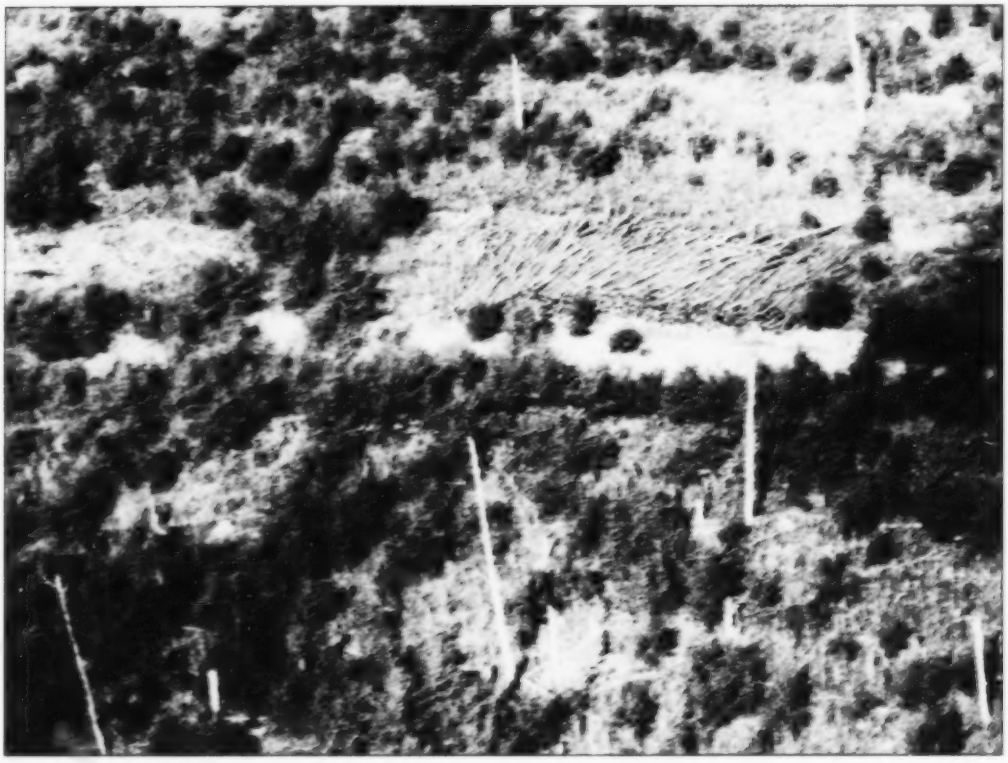
- Forest inventory sampling design.
- Use of national forest inventory information.
- The establishment of permanent sample plots.
- Tracking and analysis of harvested volumes within forest types.

During the preparation of the 2005 FMP, information provided by the new inventory and new analytical tools (i.e. tree list generator) were used for the yield forecasts. In addition, third party verification of the yield curves was incorporated into the plan. We concluded that Bowater is addressing the issue in an appropriate manner and needs to continue to monitor and increase the accuracy of yield predictions. A recommendation is provided.

Recommendation # 5:

Bowater should continue to evaluate and increase the accuracy of yield curve predictions used for forest management.

Silvicultural Ground Rules (SGRs) for forest management activities were drafted in accordance with guides produced by the OMNR and incorporated historical data on forest succession, and local knowledge and experience. All silvicultural treatments proposed were consistent with recommendations in the Silvicultural Guides. Three silvicultural treatment intensity options were developed; extensive, basic, and intensive. The audit site visits found that harvest operations were conducted in accordance with the SGRs, were consistent with the forest operations prescriptions (FOPs) and were appropriate to site conditions. Some localized instances of poor wood utilization, wasteful practices and some rutting was observed (Photograph #2). Due to the localized nature of these occurrences we concluded that an audit recommendation was not warranted.



Photograph #2. Wood left on harvested block.

The Comparison and Trend Analysis Report indicates a trend where actual harvest depletion is approaching the forecasted area available for harvest. The increase in actual harvest volume from the previous period[9] was attributed to increased harvesting to replace fibre lost to natural disturbances (e.g.1999 fire), increased production capacity (i.e. Bowater sawmill) and increased harvesting activity on the DRMF during haul restriction periods due to the Forest's proximity to the Thunder Bay mill.

Achieving full utilization of white birch, cedar, and larch has been problematic as supply exceeds mill demand. Bowater improved its pulping process in order to utilize birch in hardwood kraft and newsprint. Actual birch volumes harvested increased from 1,936 m^3 to 49,736 m^3 over the period of 1995-2005. However, amounts utilized are considerably less than the available supply (annualized forecast volume 72,840 m^3, actual harvest volume 49,736 m^3). As in previous plan terms, some birch was left at roadside in designated fuel wood areas to more fully utilize the resource. The 2000

[9] 1995-2000 actual annualized harvest volume 909,765 m^3. 2000-2005 actual annualized harvest volume 1,039,516 m^3.

Independent Forest Audit recommended that the OMNR rationalize hardwood supply commitments and determine sunset dates for utilization. The Summary of the Action Plan Status Report indicated that a review was completed and we confirmed that action.

The past application of the moose guidelines resulted in a relatively high proportion of smaller-sized harvest blocks on the DRMF. This circumstance resulted in instances where younger age stands were allocated for harvest where they occurred adjacent to, or within, targeted older age class allocations. We confirmed that this was an appropriate action.

We noted that GPS technology had been successfully adopted to reduce the number of compliance infractions, and that the application of snag tree retention improved during the audit period. Slash and chipper debris was being managed.

Harvesting operations were conducted by independent contractors. They used a combination of feller-bunchers, grapple skidders and full-tree chippers to harvest and process wood. Buchanan Forest Products was the major Overlapping Licensee.

While salvage harvesting opportunities were not identified in the FMP, an unanticipated operation was conducted as the result of a severe wind event in 1999. A minor amendment was prepared and submitted in May 2000.

While harvest operations were generally conducted according to standards, we did identify some issues.

Traditional Crown Operators

Several of the overlapping Forest Resource Licences (FRL) were traditional Crown operators (TCOs) that held District Cutting Licenses in the former Shebandowan and Upsala Crown Management Units. They were assigned a wood commitment on the DRMF at amalgamation. The details of the commitment were identified through a TMP amendment (1995). According to Bowater, the commitment to the TCOs was an area of 205 ha per year for their combined operations. However, the administration of the commitment has led to on-going discontent and legal disputes between the TCOs, Bowater, and the OMNR since 1996. The basis of the disagreement is the contention of some TCOs that they had not been recognized as legitimate harvest right holders.

We were informed that some of the issues have been resolved with some of the operators. However, at the time of the audit, other TCOs had submitted a legal challenge with respect to harvest rights. After the field audit, we were informed some of those TCOs (Upsala Shebandowan Loggers) had

tentatively approved an agreement with OMNR and Bowater. While we recognize the complexity of these types of issues and the fact that all parties have been attempting to reach a resolution, this dispute over a public resource has continued far to long. We encourage the Thunder Bay OMNR to use its authority to bring it to resolution.

Recommendation # 6:

The OMNR District Manager should continue to work with Bowater and the traditional crown operators towards finalizing agreements to resolve long standing issues.

Practice of Suspending Harvest Blocks

We were concerned about the practice of suspending harvest blocks on the Forest. This practice frequently left harvested wood on cut blocks for periods of up to several years. Under these conditions wood quality can deteriorate to a point where merchantable volume is lost. Typically, "suspended blocks" cannot be scheduled for silvicultural treatments until harvest and hauling is completed. This situation created problems for compliance monitoring and created a public perception that wood was being wasted. It is our opinion that the practice of suspending blocks also compromised silviculture effectiveness in that competing vegetation could be well established on sites prior to renewal treatments, and areas where wood was piled remained unavailable for treatment.

District OMNR staff informed us that operations and reporting for blocks should be completed prior to the commencement of other forest operations. Bowater staff informed us that this requirement unnecessarily restricted its ability to schedule silvicultural treatments. We contacted a senior OMNR compliance official and were informed that there were tools available in the CFSA and FOIP for the OMNR District to allow cut areas to be released for silviculture and to separate harvesting and hauling activities.

Recommendation # 7:

Local OMNR and Bowater must develop a protocol with respect to "suspended blocks" to ensure that harvested wood is hauled in a timely manner and that routine silvicultural operations are not adversely affected.

3.4.3 RENEWAL

The audit sampled approximately 20% of artificial and natural renewal activities conducted during the audit period. All activities observed were

approved in the FMP and complied with the applicable silvicultural ground rules. Activities were consistent with the FOPs and were appropriate to specific site conditions.

The harvesting and renewal programs were generally in balance over the audit period (a total of 47,380 hectares was harvested and 53,248 ha was treated for renewal (artificial and natural)). Over the past three planning terms, Bowater had conducted renewal activities on 94% of the area harvested. During the 2000 FMP term there was an overachievement of planned vs. actual natural regeneration with 21,602 ha planned and 27,375 ha achieved. This overachievement of natural regeneration was attributed to the timely completion of regeneration surveys on areas depleted (i.e. "cuts not treated" depletions classification) during the audit period and the completion of surveys on areas left for natural renewal in past plans.

As a result of planned targets for lowland spruce forest units not being met actual artificial regeneration achieved 76% of planned renewal targets (25,873 ha vs. 34,050 ha planned) during the audit period. Bowater determined that these sites were naturally regenerating following logging, and that for most sites planting was not required. We randomly sampled regeneration on a number of lowland sites left for natural regeneration and found that they were sufficiently stocked to conifer.

Table 4 presents a comparison of intensive renewal (i.e. artificial) and extensive (i.e. natural) renewal silvicultural on the DRMF. For the audit period, the forecast split between artificial and natural renewal was 60:40. The actual split was approximately 50:50. The reliance on natural regeneration can be attributed to the fact that spruce and poplar are dominant forest types on the DRMF and are well suited to natural renewal strategies.

Table 4. Percentage Comparison of Forecast vs. Actual Natural and Artificial Renewal

Period	Natural Renewal		Artificial Renewal	
	Forecast	Actual	Forecast	Actual
1995-2000	49.5%	23.1%	50.5 %	76.9%
2000-2005	38.8%	51.4%	61.2 %	48.6%

Photograph #3. Successful regeneration on a clearcut harvest block.

There has been a significant decline in the area reported as barren and scattered and not sufficiently regenerated between 1990 and 2005 (160,615 ha in 1990 plan term to 14,889 ha in 2000 plan term) due to a change in reporting classification. Between 2000 and 2004, 54,304 ha were surveyed for regeneration success and 43,498 ha were declared satisfactorily regenerated (80%).

We are concerned with the significant amount of area (approximately 20%) reported as depleted (143,626 ha) during the audit term. These areas represent harvested or naturally disturbed stands that are regenerating, but do not have an FRI description, since they had not been classified as free-to-grow. We determined that Bowater is actively surveying depleted areas as a component of its silvicultural program, but the large area with indeterminate status remains a concern, particularly in light of the projected future wood supply issues.

Recommendation # 8:

Bowater should accelerate its survey program for depleted lands and determine the status of these areas for incorporation into the FRI.

Bowater had implemented a strategy to enhance the conifer component in upland mixed wood stands by promoting the natural regeneration of conifers and/or tree planting to augment conifer stocking levels. Competition from non-crop species on mixed wood sites is a concern, requiring considerable professional judgment with regards to site specific regeneration strategies and tending prescriptions. Diligent monitoring is required to ensure that site competition is assessed in an appropriate timeframe, and that timely follow-up treatments are implemented to ensure that the investment in regeneration is not lost. We visited several sites where more timely and/or more frequent tending intervention was warranted. In our opinion, Bowater needs to improve its field tracking to facilitate the early assessment and treatment of competition on mixed wood sites. A recommendation to address this issue is provided in Section 3.4.4.

Planned targets for site preparation were underachieved in the 2000-2005 period (63% of planned). Mechanical site preparation targets achieved approximately 59% of planned levels. This underachievement reflected lower than planned harvest levels, and less area being targeted for artificial regeneration due to successful natural regeneration.

During the audit term there was an overachievement in chemical site preparation with 961 ha treated vs. a planned area of 200 ha. Bowater post harvest surveys indicated the treatment was warranted due to heavy competition on upland sites. We concluded that the requirement to chemically site prepare more area than planned was in part attributable to Bowater delays in implementing post harvest silvicultural treatments as discussed above.

3.4.4. Tending and Protection

The audit sampled approximately 20% of tending activities conducted during the audit period. All activities observed were approved in the FMP and complied with the applicable silvicultural ground rules. Tending activities were consistent with the FOPs, and were appropriate to specific site conditions. A total of 106 tending compliance inspections in the audit period resulted in only one NIC report.

Over the three planning terms, tending treatments were planned on 84,696 ha and 72,269 ha were treated (85% achievement of planned targets). Actual areas tended were significantly below planned levels for the 2000-2005 plan term (~53%) of planned.

Bowater initiated a post-cut silvicultural prescription program during the audit period to increase silvicultural program efficiency by assessing requirements after harvest We were informed that the intent of the program was to increase the effective use of dollars through the elimination of ineffective or marginally effective treatments. For example, in some instances, Bowater post harvest surveys determined that some previously scheduled site preparation areas could be artificially regenerated without site preparation, and that some areas scheduled for artificial renewal had sufficient natural regeneration to meet stocking standards (i.e. spruce lowland sites

Additionally, we were informed that areas within some harvest blocks would be left untreated (based on post-cut surveys) to;

- Create mixed forest conditions for habitat and forest diversity.
- Recognize areas of high potential for natural regeneration.

We recognize the importance of cost efficiencies in the delivery of silviculture. The targeting of silvicultural investment to sites where there is a predictable silvicultural response, and better return on investment, is appropriate. However, we determined some site assessments could take several years, depending on the target treatment (i.e. natural regeneration). As well, in our view, the competitive nature of many of the inspected sites demanded earlier interventions than had occurred. We viewed several artificial and natural renewal sites where a better return on investment could have been realized by earlier tending operations. We believe Bowater needs to be more diligent in monitoring sites to avoid remedial silvicultural costs (i.e. infill planting). A recommendation is provided.

Recommendation # 9:

Bowater must increase its silvicultural tracking and effectiveness monitoring program and when warranted implement follow-up silvicultural treatments without delay.

3.4.5. Renewal Support

Renewal support activities on the DRMF included tree seed collection, planting stock production and tree improvement operations. For the 2000-2005 FMP, it was estimated that 30 million seedlings and 4,060 hectolitres of forest tree seed would be required to support the renewal program. During the plan term, 3,101 hectolitres of seed were collected. We determined that this level of achievement was acceptable due to the lower than planned harvest levels, and the increased reliance on natural regeneration. Planting

stock requirements were below estimated plan levels due to increased reliance on natural regeneration on most harvested sites.

Since 1985, Bowater has been involved in a Tree Improvement Program (Superior / Woods Tree Improvement Association). This program is a joint venture involving Bowater, Abitibi Consolidated, and the Ontario Ministry of Natural Resources. The intent of the program was to obtain genetically improved and superior quality tree seed from several forests near Thunder Bay including the Dog River Matawin, Brightsand, Black Sturgeon, Spruce River and several blocks of Abitibi Consolidated free-hold land. Tree improvement activities during the audit period included plus tree selection, family test establishment, seed orchard establishment, breeding orchard establishment, family test performance measurements, and orchard and family test maintenance.

We conclude that Bowater has a proactive and effective renewal support program.

3.4.6. Access

The DRMF has been accessed extensively for many years resulting in a large network of roads. Roads were well built and were generally well maintained.

Detailed information for each proposed primary and secondary road was documented in the FMP, and road alternatives and public comments were considered prior to the finalizing of road corridors. Bridges were constructed to standard, as was rehabilitation work where bridges and culverts had been removed. We conclude that FMP requirements for access were met.

The previous IFA recommended that OMNR and Bowater develop a procedure to identify and mark road safety hazards. We determined that this recommendation had been addressed, and a procedure was in place. However, the implementation of the procedure was highly dependent on the public to report safety concerns or washouts on inactive roads. We believe additional effort is required. Bowater indicated that it planned to implement an enhanced monitoring program for abandoned roads during the 2005 FMP term. We feel this is a significant issue on the Forest, and provide the following recommendation.

Recommendation # 10:

Bowater should develop and implement an active roads monitoring program for abandoned roads during the 2005 FMP term.

The previous IFA also indicated that Bowater and the OMNR should, determine liability and maintenance responsibility for all primary and secondary roads on the DRMF. This is a complex issue, some progress has been made, and discussions are on-going between the parties. We do not believe a recommendation is required.

3.5. SYSTEMS SUPPORT

3.5.1. HUMAN RESOURCES

Bowater had an effective communication system that utilized formal training, employee and contractor meetings, e-mail, a website and on going face-to-face communications to ensure information was distributed and understood. Subcontractors and Buchanan staff indicated that they were routinely informed of Bowater policies and directions, and were aware of Company expectations with respect to safety, forest management, and long-term sustainability objectives. They had access to a range of training associated with safety, company policies, forest operations, and OMNR guidelines.

We reviewed training plans for Bowater and OMNR staff listed in the Audit Plan. There were formal training programs in place related to forest management, and staff had received the training.

We note that the Bowater business model relied heavily on contract staff for the delivery of forest management on the DRMF. The production of the 2005 FMP was contracted to a consultant, and the preparation of other required documents (e.g. Annual Reports) was also contracted. We are concerned that Bowater's reliance on contractors for the delivery of a number of SFL functions could create continuity issues and diminish in-house corporate knowledge and capacity. In previous sections of this report, we noted very serious issues associated with development of the 2005 FMP (discussed in Section 3.3.1.) and the preparation of Annual Reports (Section 3.6.2.), and provided recommendations.

3.5.2. DOCUMENTATION AND QUALITY CONTROL

Bowater had an effective system for document control and retrieval. All forest management reports were stored in a dedicated room. A sign out procedure was in place to enable document tracking. OMNR had up-to-date records and documents. Both organizations were able to provide us with requested records and information.

Bowater had a GIS system which it used as a decision support tool for forest management planning, record and document control, and other database functions. The system also facilitated the tracking of silvicultural treatments.

Sections 3.6.2. and 3.3.1.1. identify and discuss issues related to document accuracy and quality.

3.6. MONITORING

3.6.1. GENERAL MONITORING

A Forest Compliance Strategy was prepared by the OMNR for the five-year plan term. The strategy was based on provincial compliance planning direction. The required Annual Compliance Operations Plan (ACOP) and a Compliance Activity Schedule (CAS) were prepared.

The DRMF is an active Forest with a large number of operations and heavy recreational use. Over the audit period, there were a combined total of 249 NIC incidences (Table 5). A general review of compliance on similar sized Forests in Ontario showed that the average number of NIC reports was typically less than 50 for a five-year period. These statistics suggest underlying compliance issues on the Forest that OMNR should be concerned about. We note in Table 6 that OMNR completed 257 inspections over the audit period. We do not believe that this number is sufficient given the level of forest management activity and high number of NICs reported per year (Table 5).

On average, OMNR completed approximately 10% of all the compliance inspections. While corporate OMNR has no specific numeric targets regarding inspection levels, we believe that this percentage was inadequate and that a more appropriate target would be in range of 20%. A recommendation is provided to address this issue.

Recommendation # 11:

OMNR should significantly increase its monitoring activities on the Forest. Compliance monitoring targets established by OMNR should approximate 20% of the total number of annual inspections carried out on the Forest.

Table 5. Annual Inspections and Reports by Industry and OMNR, 2000-2005

Inspections and Reports	2000-01		2001-02		2002-03		2003-04		2004-05	
	Ind	OMNR	Ind	OMNR	Ind	OMNR	Ind	OMNR	Ind	OMNR
Total Number of Reports	476	74	540	51	458	42	461	56	441	34
IC	265	12	350	14	259	14	239	26	361	19
IC with Comments	175	13	166	17	151	11	198	17	59	12
NIC	36	49	24	20	48	17	24	13	15	2

IC = In Compliance
NIC = Not in Compliance
Ind = Industry

As shown in Table 6, the ratio of inspections resulting in NIC reporting for harvesting activities on the Forest varied considerably between the industry and the OMNR.

Table 6. Inspections and Reports for Industry and OMNR by Activity, 2000-2005

Harvesting Activity	Number of Compliance Inspections		Number of NIC Reports	
	Industry	OMNR	Industry	OMNR
Access	294	70	19	24
Harvest	1,557	169	123	77
Renewal	421	16	4	1
Maintenance	104	2	1	0
Protection	0	0	0	0
Total:	2,376	257	147	102

During the audit period, forest industry completed 1,557 harvest inspections and filed 123 not-in-compliance reports (8%). OMNR conducted 169 harvest inspections and filed 77 NIC reports (46%). We are aware that different inspectors may classify the same infraction as "In Compliance with Comment" or "Not in Compliance". However, the differences in reporting that existed during the audit term were dramatic. Therefore a recommendation is provided.

Recommendation # 12:

OMNR and Bowater should ensure that compliance standards are consistently applied.

ACOPs require a review of compliance strategies, monitoring processes, compliance priorities, and updates of activities on the forest. We were informed that because of operating conditions and the large number of operators on the Forest, the OMNR, and Bowater developed an arrangement for monthly activity scheduling. Interviews with staff from both organizations confirmed that this was a practical and efficient approach. However, the process required that monthly schedules be produced and submitted to OMNR in a timely manner. We note that in 2003-2004, a notice was issued to Bowater for failure to submit required documents according to schedule. No recommendation is provided as action was taken to resolve the matter.

In 2002, an FMP amendment assigned responsibility for Compliance planning, inspections, and reporting to Buchanan Forest Products Limited (BFPL) for its operating areas. BFPL compliance planning met requirements and in our opinion the level of field inspections was adequate.

OMNR and Bowater did not fulfill their requirements to submit Forest Operations Compliance Information System (FOCIS) and Forest Operations Information Program (FOIP) reports on time. At the time of the audit, compliance inspection reports had not been completed for over 100 harvest blocks. Some blocks were "suspended" and compliance inspection reports had not been completed for others. A recommendation is provided.

Recommendation # 13:

OMNR and Bowater should meet FIM requirements for compliance reporting.

3.6.2. Annual Report

An Annual Report (AR) summarizes the forest management operations carried out during the preceding year (April 1st- March 31st). The purpose of the AR is to document the annual implementation of forest management operations, and to monitor the progress towards achieving targets identified in the FMP. The text provides explanations for significant differences between the level of activity scheduled in the AWS and the level of activity that actually occurred. The text also discusses any emerging trends or issues. The Plan Author is responsible for the preparation of the AR, and the OMNR has responsibilities for specific components of it.

Annual Reports were submitted on time with the exception of the 2003-2004 (spring) submission which was 15 months late.

The OMNR review of the reports from 2000 to 2003 found the submissions to be inadequate, and Bowater was required to re-submit a number of times. This resulted in the late approval of the documents by the District Manager.

The 2000 IFA contained two recommendations directed at the completeness, accuracy, and timely submission of Annual Reports. One recommendation was directed at Bowater with respect to the validation of information, and the other was directed at the OMNR with respect to completeness and timely review. We determined that similar issues with respect to completeness, accuracy, and timely submission continued into this audit term. For example, reporting of forest compliance activities was deficient as text providing details of the NIC reports, the outcomes, the penalties, the level of planned vs. actual activities, etc. were not included, and the reporting tables containec inaccuracies. A recommendation is provided.

Recommendation # 14:

OMNR and the Bowater should ensure that Annual Reports meet FMPM requirements.

3.6.3. Report of Past Forest Operations

The Report of Past Forest Operations provides public information on forest management operations and information to assist with future forest management planning.

It is our opinion that the RFPO met FMPM requirements. It provided a summary and analysis of the actual and planned forest operations for the April 1st, 1995 to March 31st, 2000 term of the 1995-2015 Timber Management Plan (TMP). Data incorporated in the report was based on five year data retrieved from the Annual Report tables and interviews with forest management staff. Tables were accurate and complete. The report included an analysis of revenues and expenditures. It also included an evaluation of operations, an assessment of forest sustainability and the achievement of management objectives. In our assessment, reasonable explanations were provided for shortfalls in the achievement of planning targets. The RPFO assessment of the indicators of sustainability indicated that operations were sustainable and that management objectives were being achieved.

As required the RPFO provided recommendations for consideration by the planning team in the preparation of the 2005 FMP, and we confirmed that it was used.

3.7. ACHIEVEMENT OF MANAGEMENT OBJECTIVES AND FOREST SUSTAINABILITY

3.7.1. ACHIEVEMENT OF MANAGEMENT OBJECTIVES

The IFAPP requires the auditor to examine and comment on the achievement of management objectives. Table 7 lists objectives from the 1995-2000 TMP for the Dog River-Matawin Forest and provides the RPFO Author's assessment of the achievement of the plan objectives.

Table 7. Summary of the status of the 1995-2000 Dog River Matawin Forest TMP Management Objectives

Objectives	RPFO Author Comments and Notes
Harvest and Wood Supply Objectives	
To maximize the harvest of marketable timber through accepted principles of sound forest management from the DRMF within a framework of sustainability, responsible management of other resource values and consideration / acknowledgement of public concerns.	With some exceptions, this objective was met.
Utilization Objective	
To promote the optimum utilization of marketable fibre from the stands allocated for harvesting by all licensees.	The continued use of in-bush chipping, and wood directives helped to achieve this objective.
Integrated Resource Management Objective	
To coordinate timber management activities so that the opportunities for other commercial and recreational forest uses are enhanced, or potential negative impacts are mitigated through modified operations to the fullest extent possible. Operations will be conducted in a manner that will ensure that the principle of "no net loss" of fish or wildlife habitat results from forest management activities.	Cooperating with OMNR and applying the guidelines as they emerged helped meet this objective.

Environmental Quality Objective	
To ensure that all forest management activities are implemented in a manner that will protect and maintain environmental quality, consistent with approved policy and guidelines.	Cooperating with OMNR and applying the guidelines as they emerged helped meet this objective.
Renewal and Maintenance Objectives	
To implement a silvicultural program that is capable of producing and maintaining a sustained supply of marketable fibre from the DRMF during subsequent operating periods for all licensees.	This objective was met in that a program was implemented, but its effectiveness must be evaluated in the next planning process.

Table 8 provides a summary of the status of the 2000-2005 Dog River-Matawin Forest FMP objectives and provides auditor comments.

Table 8. Summary of the Status of the 2000-2005 FMP Objectives

Objectives	**Achieved Yes / No / Partial**	**Auditor Comments and Notes**
Forest Diversity Objectives		
Forest Diversity To maintain long term forest diversity through sustainable forest management practices.	P	Forest management practices emulated natural disturbance patterns. The habitat for marten declined in selected management alternative. The relative proportion of forest units were maintained over time with consideration for a planned increase in conifer composition. The forest and landscape diversity indicators were maintained within the natural range of variability.

Increase the Conifer Composition To increase the amount of conifer composition on the forest that better reflects the natural successional environment after wildfire.	P	Strategies were implemented to increase conifer composition on the Forest. There were problems with respect to the timeliness and effectiveness of silviculture treatments (e.g. tending) on competitive sites.
Forest Cover Fragmentation by Age Class To reduce overall forest cover fragmentation by applying harvest block sizes which better emulate past natural fire history successional patterns.	Y	Forest harvesting emulated natural disturbance patterns. Harvesting of residual timber in cutovers occurred to reduce fragmentation and emulate disturbance patterns.
Red Pine and White Pine Forest Ecosystem Maintain and increase the presence of red pine and white pine forest ecosystems, including old growth stands, over the landscape of the Dog River - Matawin Forest while permitting a sustainable harvest of red and white pine tree species.	Y	Strategies for preserving old growth pine were adopted and planting of pine occurred (e.g. 860,000 seedlings planted on 827 ha). Appropriate prescriptions for harvest of pine were adopted. Bowater has developed "Best Management Practices for White Pine".
Great Lakes St Lawrence Region Ecosystem Maintain ecosystems which are associated with the Great Lakes St. Lawrence deciduous species.	Y	Other hardwoods were maintained on the Forest with appropriate prescriptions.
Social and Economic Objectives		
Forest Industry		Harvest allocations were

To provide a sustainable, economical supply of timber to the local forest industry in Thunder Bay, Atikokan, Upsala, and other communities acquired through environmentally sound practice and to promote optimal utilization of available wood fibre.	P	planned at the full available harvest level and Bowater indicated that the entire allocated area would be harvested during the 2000-2005 plan term. Bowater achieved 81% of its planned harvest target (planned 58,759 ha vs. actual 47,380 ha). Full utilization of white birch, cedar and larch remained a problem on the Forest as supply exceeds mill demand.
Local Employment To make available local employment opportunities in the Forest Industry.	P	Contractors are local. First Nations were provided with employment opportunities. At the time of the audit, there were unresolved issues regarding allocations to Traditional Crown Operators.
Personal Use of Forest Products To make available incidental volumes of timber for such uses as fuelwood, building logs, fence post material and timber for other personal uses.	Y	White Birch was left at roadside in designated fuelwood areas. Fuelwood areas were identified within accessible, high demand areas.
Tourism To plan, implement and monitor forest operations in a manner that does not adversely affect the economic viability of the resource based (remote, semi-remote, and road accessed) tourism industry established within the Dog River Matawin Forest.	Y	Road access was planned to avoid and mitigate impacts on remote tourist operations. Appropriate AOC prescriptions were utilized to protect trails and portages.

Other Commercial Usage (Non Timber) To conduct forestry operations in a manner that considers and respects the other businesses which are located on, or utilize resources within the Dog River-Matawin Forest. (Mineral exploration, trappers, bait fishermen, BMA holders etc.).	Y	All forest users were invited to participate in the planning process. There were efforts to mitigate the impacts on mining, trappers, bait fisherman, and BMA holders (e.g. mapping, dialogue in the field, notifications). There was active communication and sharing of information with the LCC.
First Nations Involvement To work with local First Nations communities to identify and implement ways to maintain the inherent social and economic benefits to Native peoples who traditionally use the forest for subsistence and spiritual value.	Y	Bowater and OMNR actively worked with local First Nations to protect values and increase their involvement in forest management.
Private Property/Patent Lands To conduct forestry operations in a manner that protects private property or Patent Lands within the Dog River - Matawin Forest.	Y	Private lands were identified on maps and GPS technology was successfully used for the delineation of boundaries.
Public Access To maintain or enhance road access for land use and recreational opportunities through road development into areas planned for harvest within the next planning period.	Y	Public access was provided with OMNR concurrence. Bowater and OMNR maintained communications and cooperation with cottager associations. Access opportunities were reviewed in the AWS.
Salvage Operations To salvage timber from natural disturbance events (i.e. blow down,	Y	A salvage operation was undertaken to recover timber damaged by wind

fires, insect and pathological infestations).		event. Natural disturbance events were mapped and incorporated into the FRI.
Utilisation of Timber Volumes within Riparian Areas of Concern To evaluate and identify timber harvesting opportunities permissible within riparian areas of concern, in order to acquire timber volumes which in the past have been left in an unmanaged state.	Y	50 ha were harvested on a trial basis using various logging methods to determine costs, production and assess site impacts. Bowater determined that if harvesting in AOC could be coordinated with operations in adjacent blocks additional fibre could be retrieved. They determined that this could be done with no damage to watercourses and at reasonable expense.
Mining and Mineral Exploration Access To maintain or enhance mining and mineral exploration opportunities on the Dog River-Matawin Forest.	Y	Bowater roads were available to facilitate mining and exploration. Communications were maintained with the mining industry.
Forest Cover Objectives		
Featured Species Wildlife Management To maintain a forest landscape pattern that will supply suitable current and future habitat for featured wildlife species over time, within the bounds of natural fluctuations in habitat and wildlife populations.	P	The selected management alternative reduced marten habitat. Moose habitat (aquatic feeding areas) was maintained through AOC prescriptions. Other wildlife values were protected by appropriate AOC prescriptions. The SFMM model analyzed

		the impact of forest management activities on preferred habitat for a full spectrum of wildlife species (e.g. boreal red backed vole).
Fisheries Habitat and Water Quality To maintain water quality and protect fisheries habitat within watersheds where forest management activities occur.	Y	Habitat was protected using appropriate AOC prescriptions. Water crossings met standards.
Protection of the Quetico Park Watershed and Quetico Park Values To protect the watershed flowing into Quetico Park and values along the eastern boundary of Quetico Park.	Y	Water crossings met standards. Values adjacent to Quetico Park were protected through AOCs. Riparian reserves were established along waterways. Road construction avoided access to Quetico Park.
Parry/Michener Moose Viewing Area To plan and implement forest management activities within the Michener/Parry area which provides suitable habitat for moose to maintain the area as a moose viewing area.	Y	Moose guidelines were appropriately applied. Moose guidelines were given a priority over marten within this area.
Silviculture Objectives		
Forest Productivity To maintain the long term industrial productivity of the forest so as to maintain a sustainable wood flow which is accomplished in an environmentally sound manner through harvesting, renewal, protection, access and stand	P	Monitoring and assessment programs were not completely effective. There were problems with respect to the timeliness and effectiveness of silviculture treatments (e.g. tending) on competitive sites.

maintenance while not compromising the ecological diversity of the landscape.		There has been a significant decline in the area reported as barren and scattered and not sufficiently regenerated between 1990 and 2005 (i.e. 160,615 ha in 1990 plan term to 14,889 ha in 2000 plan term). Between 2000 and 2004, 54,304 ha were surveyed for regeneration success and 43,498 ha were declared satisfactorily regenerated (80%). There is a significant amount of area reported as depleted (143,626 ha) requiring survey.
Renewal Program To implement an efficient and cost effective renewal program which provides for the sustainability of the forest land base to meet the needs for timber products (sawlogs, veneer, fibre) wildlife habitat and other uses of the forest.	P	Planned natural regeneration targets were overachieved. Planned artificial renewal targets were underachieved. Tending treatments were often poorly timed resulting in additional silvicultural costs. Silvicultural ground rules conformed to the appropriate silvicultural guides.
Density Management To apply cost effective renewal techniques such as juvenile spacing and commercial thinning, to improve growth and future volume yields over the long term.	P	2,959 ha of spacing were completed (40% of FMP target). Ground rules conformed to the appropriate silvicultural guides.

3.7.2. Review of RPFO Assessment of Sustainability

The Report of Past Forest Operations was based on a plan written and approved under the Timber Management Planning Manual, and sustainability requirements were not in place at the time of the plan approval. Measurable data on habitat for selected wildlife species, landscape processes, and socio-economic data were not available. However, it was the opinion of the RPFO Author that, the forest operations on the DRMF were sustainable.

The RPFO indicated that estimates of landscape and forest diversity contained in the 2000 FMP would provide a benchmark for future analysis. There was little change in forest cover types from 1990 - 2000. No conclusion could be drawn from the analysis of the summary report of wildlife habitat as this was not a TMPM requirement. The Author indicated that at the landscape level wildlife populations had not been adversely impacted by forest management activities, and attributed the proper implementation of various management guidelines on the DRMF as a contributing factor.

The Author stated that there was no indication of significant losses of soil due to erosion, nutrient removal, or changes in hydrology arising from forest management practices, although the potential for negative impacts by road construction and maintenance were acknowledged. Soils and water resources in forest operations were protected through the use of provincial management guidelines and Bowater internal environmental policies. While the Author indicated that the standard of environmental practices on the Forest had improved over a ten-year period no quantitative data was provided to support the assertion.

There was not a requirement for socio-economic analysis during the TMP planning term. He indicated that maintenance of the harvest level identified in the 1995-2015 TMP would be a challenge in the 2000 FMP depending on the trade-offs achieved with other non-timber objectives. The Author concluded that *"forest management is in alignment with the goals associated with forest sustainability"*. Recommendations were provided to the planning team for consideration in the development of the 2000 FMP.

In our opinion, the RPFO Author provided as complete a summary as he could with the information available at that time. From our perspective, a key determination of the RPFO was the discussion related to the maintenance of harvest levels, and the challenges that would pose for the development of the 2000 FMP. Both the approved 2000 and 2005 FMPs addressed the identified issue with deferred harvest reductions (Section 3.3.6.).

3.7.3. Review of the Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

The Comparison and Trend Analysis report was prepared by Bowater staff as a requirement of the IFA process. The purpose of the Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report is to provide an interpretation of the current state of the Dog River-Matawin Forest relative to its historic state.

The following trends are significant on the DRMF:

- The area of production forest and total forested land increased over the three planning terms (1990-2005) due to the addition of the former Shebandowan and Upsala Crown Units to the Forest in 1998.
- The area of B&S/NSR land decreased significantly from 160,615 ha in 1990 to 14,889 ha in 2000. However, the area reported as depleted for the 2000-2005 is significant (143,626 ha). The auditor is of the opinion that the survey program for depleted areas needs to be expanded. This issue is discussed in Section 3.4.3.
- The planned annualized harvest area for the three terms (1990-2005) was 32,299 ha. Actual annualized harvest area was 23,672 ha (73% of planned target). A trend where actual harvest depletion is approaching the forecasted area available for harvest is occurring as the Forest provides 25% of the mill's wood supply.
- 68% of the total planned harvest volume was achieved over the three planning terms. This volume was harvested from 88% of the planned harvest area. This issue is discussed in the Section 3.4.2.
- Over the three planning periods site preparation treatments achieved 77% of planned targets. This was the result of less area being harvested than planned and less area being targeted for artificial regeneration due to successful natural regeneration.
- Over the three planning periods artificial regeneration treatments achieved 84% of planned targets. Planned targets were underachieved by 9% in the 1990 period and by 24% during the 2000 plan term mainly due to an increased reliance on natural regeneration.
- The results of Free-to-Grow surveys confirmed that silvicultural objectives on the Forest had been achieved. During the 1990-1995 period, 35,962 ha were surveyed for regeneration success and 34,258 ha were declared satisfactorily regenerated (95%).

In our opinion, the Comparison and Trends Analysis report met IFAPP requirements.

3.7.4. Achievement of Forest Sustainability

To determine the achievement of sustainability we examined the FMPM requirements for forest sustainability and the performance of the licencee during the audit period. At a management unit level, the FMPM has five criteria used for the determination of sustainability. These are Biodiversity, Forest Condition and Ecosystem Productivity, Soil and Water Quality, Multiple Benefits to Society, and Accepting Society's Responsibility for Sustainable Development.

A series of measurable indicators has been developed for each of these criteria. These indicators are critical for;

- the assessment of individual Forest Management Plan alternatives.
- the assessment of trends over successive Management Plan periods.

Outlined below is our assessment of sustainability for the 2000 FMP.

Biodiversity

We conclude that biodiversity is being largely maintained in the Forest. In the planning process management alternatives were measured against sustainability indicators (e.g. landscape pattern indices, frequency distribution of clearcuts and wildfire size, and forest diversity indices) to assist the planning team in the selection of the most suitable management alternative.

We determined that the SMA supported sustainable forest management and the achievement of desired forest management objectives.

Biodiversity was maintained as no major shift in working group area occurred over the three plan terms. We determined that forest harvesting emulated natural disturbance patterns. Appropriate application of silvicultural prescriptions in AOCs also served to maintain biodiversity.

We were concerned however, with a declining trend in marten habitat. On the DRMF, the availability of marten habitat is largely a reflection of the history of past forest management practices (e.g. moose guidelines) and balancing habitat with other objectives (e.g. employment). The 2005 FMP SFMM model projections show that habitat areas, while continuing to decline, do stabilize over time. We note that it was OMNR concern about marten habitat supply that contributed to the rejection of Alternative # 5 in the 2005 FMP.

Soil and Water Conservation

Net primary productivity (NPP) and water yield are expressions of landscape processes and indicators of forest sustainability. Base values for net primary productivity and water yield were calculated and will be compared to future values as a gauge of forest sustainability.

Operations on the Forest protected soils and water, and with few exceptions were conducted in accordance with the guidelines. We conclude that this criterion was met.

Forest Ecosystem and Forest Productivity

Maintenance of ecosystem productivity on the DRMF was supported by the following trends:

- No major shift in working group area occurred.
- The area classified as barren and scattered and not satisfactorily regenerated decreased significantly over the 1990 to 2000 term.
- Annualized area regenerated approximated the annualized harvest area.
- Forest harvesting emulated natural disturbance patterns and harvesting of residual timber in cutovers occurred to reduce fragmentation.
- Slash and chipper debris management effectively reduced the loss of productive forest land in harvest areas.

The FMP forecast a split between artificial and natural renewal of 60:40. The actual split during the audit period was approximately 50:50. The variation between planned and actual silvicultural intensities was attributed to an increased reliance on natural regeneration for spruce and poplar. These forest types are well suited to extensive (e.g. natural) renewal strategies and our field inspections indicated natural regeneration was occurring.

Our field inspections indicated that spruce lowland sites were adequately regenerating following logging, and that most of these areas did not require planting to augment regeneration.

There was a planned allocation of younger than normal age classes for harvest. This was largely the result of the past application of moose guidelines that resulted in a high proportion of smaller sized harvest blocks. Younger age stands were allocated where they occurred adjacent to, or within targeted older age class allocations. We determined this strategy made

economic and operational sense, and due to its limited application did not pose a threat to sustainability. We note that over the three past planning terms actual harvests have underachieved planned targets.

We concluded that forest management activities on the DRMF were largely consistent with the maintenance of ecosystem productivity.

Multiple Benefits to Society

In our view the 2000 FMP satisfactorily achieved socioeconomic objectives:

- It provided a predictable and even flow of volume between terms (important to the viability of the wood processing facilities).
- It provided protection to the tourism industry and maintained access for recreational use.
- Bowater worked with First Nations to increase employment opportunities.

There were outstanding issues with respect to wood supply commitments which resulted in a requirement for mediation between parties, and a legal action.

We conclude that this criterion has been largely met.

Accepting Society's Responsibility for Sustainable Development

For the 2000 FMP the public was consulted and the LCC was involved. During the audit period Bowater had a formal EMS that established standards, responsibilities, training, and monitoring for all aspects of its business and received ISO 14001 registration and SFI certification. Maintenance of these designations requires monitoring, and the application of sound environmental management practices.

Many elements of the planning process for the 2005 FMP were flawed. The public was not notified that the original SMA was rejected and was not provided with an opportunity to review the new SMA.

We are concerned that a plan that did not fully meet FMPM requirements, and was deemed "unsustainable", was submitted to the OMNR and the public for review in the first place.

We conclude that this criterion was met for the 2000 FMP, but was only partially met for the development of the 2005 FMP.

Overall Conclusion on Sustainability

While there are concerns, we conclude that the forest was managed sustainably during the audit period. A full review of the 2005 FMP and in-depth analysis of the SMA and SFMM results was not a requirement of this audit. Nevertheless, during the audit, we identified several issues with respect to long-term marten habitat requirements, and increasingly constrained wood supplies. It is our opinion that these issues, if not managed, could lead to long term negative impacts on the sustainability of the Forest.

3.8. CONTRACTUAL OBLIGATIONS

Table 9 summarizes the level of achievement of SFL contractual obligations.

Table 9. Summary of Contractual Obligations and Auditor Comments on the Level of Attainment of the Contracted Obligations for SFL # 542459.

Contractual Obligation	Level of Attainment
1. Complied with the terms and conditions of the SFL.	There were significant shortfalls with respect to Bowater's compliance with the terms and conditions of the SFL. These shortcomings included unresolved issues with respect to wood supply commitments, inaccurate reporting, and submission of a FMP for approval (2005 FMP) which the OMNR deemed unsustainable. Last minute negotiations resulted in an approved FMP.
2. Payment of Forestry Futures and Ontario Crown Charges.	Payments were made as required.
3. Wood Supply Commitments. Involved Companies included: Columbia Forest Products Buchanan Northern Hardwoods Inc. Northern Sawmills Inc. Atikokan Forest Products Great West Timber Ltd.	Wood Supply Commitments on the DRMF were complex. We determined that commitments were largely met. Columbia Forest Products and Ainsworth maintained that Bowater had not met its legal responsibilities regarding assignment and supply of wood.

Weyerhaeuser Company OSBBC Ltd (Ainsworth Engineered Canada LP). Weyerhaeuser Company	Ainsworth engaged in a meditation process. Columbia Forest Products, OMNR, and Bowater were in negotiations at the time of the audit.
4. Allowable harvest levels meet contractual obligations.	Levels of harvest underachieved planned harvest targets, but were sufficient to satisfy conditions described in the SFL.
5. Prepare FMP, AWS and reports in accordance with FMPM.	For the 2000 FMP the FMPM was followed. For the 2005 planning process the Company submitted an FMP for approval which was deemed unsustainable by the OMNR. There was an excessive number of inaccuracies and a lack of required information in the original AWS submissions to OMNR. Annual Reports were submitted on time with the exception of the 2003-2004 (spring) submission which was 15 months late. There were problems with respect to AR completeness and accuracy.
6. Conduct inventories and surveys as required in FIM.	The FRI inventory was updated for the preparation of the 2000 FMP. A new FRI was conducted the during the plan period. Required values information was compiled. A backlog in assessment of depleted area exists.
7. Provide information as required in FIM manual.	A forest inventory was completed. There was late reporting of FOIR's

	by both OMNR and industry. Bowater is actively surveying depleted areas as a component of its silvicultural program, but a large area with indeterminate status remains.
8. No wasteful practices.	Some localized wasteful practices occurred on the Forest. The practice of leaving blocks "in suspension" for extending time periods was a contributing factor.
9. Salvage conditions.	Salvage operations were appropriately planned and implemented.
10. Pest control operations must be undertaken as required.	No pest control operations were conducted during the audit term.
11. Adherence to land withdrawal procedures.	Procedures were followed as required.
12. Prepare an Audit Action Plan within 2 months of receiving the final audit report. Prepare a status report within 2 years of approval of the Action Plan.	Action Plan and Action Plan Status Report were submitted on time.
13. Payment of Forest Renewal Trust renewal charges.	Payments were made as required.
14. Five-year analysis of forest renewal trust Account.	The five year analysis of the forest renewal trust account was completed March 31, 2005.
15. Minimum balance maintained in Renewal Trust Account.	With the exception of a shortfall of $ 349.18 in 2005, the minimum required balance was maintained over the audit period.

16. Maintain records of eligible silvicultural work for Renewal Trust account projects.	We sampled 20% of the Renewal Trust account projects and determined that all of the required information, maps, project records, and financial records were in place. The conditions in the field matched the records in the office.
17. Silvicultural Standards must be followed.	FMP silvicultural ground rules were implemented in accordance with guidelines and manuals. On the sites inspected, silvicultural activities were appropriate to site conditions and treatment by the selected silvicultural practice was warranted. Problems were observed with respect to the timing of silvicultural treatments which limited renewal target achievement in some instances.
18. Report on the achievement of regeneration including the assessment of free-to-grow and preparation of stand descriptions for entry into the inventory.	This requirement was met. The area of B&S and NSR lands has been significantly reduced. Surveys are being conducted on depleted lands but a significant area remains.
19. Work co-operatively with aboriginal communities.	A cooperative relationship had been established with the Lac des Mille Lacs First Nation.
20. Prepare a forest compliance plan.	Forest Compliance Plans were produced according to guidelines.
21. Deliver compliance training for staff.	All appropriate staff had received the required compliance training.
22. Conduct inspections of forest operations and deliver reports to OMNR in accordance with the approved plan.	Company submission of required reports was routinely late.
23. Assume responsibility for activities on mining leases or claim and advise claim holders.	All responsibilities had been met.

As indicated in Table 9, mediation was required to resolve wood commitment issues. It is our opinion that companies should not have to resort to mediation to ensure the fulfillment of the Minister's directives. OMNR has a clear role in the process and we provide the following recommendation.

Recommendation # 15:

Bowater should ensure that wood supply commitments in Appendix E of its SFL are met. OMNR should monitor the implementation of commitments and take action where required.

Progress on Recommendations from Previous Audits

An IFA for the DRMF was completed for the 1995 – 2000 period. Bowater and OMNR were responsible for the development of an Action Plan to address the recommendations contained in the audit. An Action Plan must be prepared within two months of the receipt of the final audit report. As well, an Action Plan Status Report is required to be completed within two years following approval of the audit Action Plan. This Action Plan and Status Report also included the status of actions for five suggestions.

The Action Plan and the Action Plan Status Report were submitted on time. Table 10 presents the actions taken by Bowater and OMNR, and notes areas where further action is required.

Table 10. Actions taken by Bowater and OMNR in response to the 1995-2000 Independent Forest Audit Recommendations.

Rec #	IFA Recommendation Dog River-Matawin Forest	Status Report on Recommendation (July 2003)	Auditor Observation
1	The Minister should extend the Sustainable Forest Licence of the Dog-River Matawin Forest. Such an extension should be conditional upon Bowater making progress to resolve/implement the recommendations of this report for which they are specifically responsible.	The extension will be completed with a series of other SFL amendments during the Spring/Summer 2005.	Not yet complete, the extension is expected to be completed in the winter of 2005 – spring 2006 as part of a larger SFL amendment package.

2	The role of OMNR in supporting the LCC should be reviewed. OMNR staff is not to be active members of the LCC.	Complete.	Complete.
3	The OMNR should insert a copy of the Annual Report of Progress with Native Communities in the appropriate SFL Annual Report and forward a copy of the same report to the company.	Complete.	Complete.
4	Bowater is to review the status of all areas harvested within the audit term (i.e. 1995-2000) and determine whether they have been treated as prescribed. For areas that have remained untreated, the company should then carry out the prescribed treatments. Where the prescription indicates that natural regeneration is the best treatment, this should be reported and records updated accordingly.	Complete.	This recommendation had not been fully implemented. Bowater had conducted surveys and reduced the area of B&S/NSR on the Forest and was conducting surveys on depleted lands in order to determine their status. However, the area classified as "depleted" remains significant. This is discussed in Section 3.4.3. A recommendation is provided. The implementation of post-harvest silvicultural program was to address issues with respect to the effectiveness of silvicultural treatments. We concluded that delays in assessing and conducting follow-up monitoring had adversely affected the delivery of silviculture. A recommendation and discussion is provided in Section 3.4.4.

5	The OMNR should review its approach to socio-economic impact assessment and use the Socio-Economic Impact Model (SEIM) and the applicability of both to forest management planning.	Completed.	Complete.
6	The OMNR, the LCC, and Bowater should jointly develop methods to reduce the number of administrative amendments and the time spent reviewing administrative amendments by the LCC.	Complete.	There was a reduction in the number of administrative amendments in the audit period. The issue is discussed in Section 3.3.9.
7	OMNR is to address long-standing data gaps for 'other values', including forest cover information on non-managed lands, fisheries habitat inventory, natural disturbance patterns, and historical forest types.	On-going.	OMNR conducted a number of surveys to update values maps. Regional OMNR specialists continue to provide information on natural disturbance patterns and historic forest conditions.
8	OMNR should investigate and fund more special surveys for critical habitats of "fine filter" species.	On-going.	Landscape, Stand and Site Guides are forecast for completion in Winter 2006-2007.
9	Bowater is to initiate operator training in the residual stand structure requirements for American marten and develop a procedure for determining compliance	Complete.	Operator training was provided and we noted an improvement in snag retention over the audit term (Section 3.4.1.).

	for residual stand structure which should be incorporated into their normal review procedures.		
10	OMNR is to review and rationalize hardwood supply commitments and determine sunset dates for utilization, to ensure full utilization of hardwood.	On-going.	Hardwood utilization remains below planned levels on the Forest (Section 3.4.2). The Northern Aspen Veneer Initiative (NAVI) addressed wood supply issues with Columbia Forest Products and MacMillian Bloedel (Levesque Plywood) (Section 3.8.). The OMNR completed an internal review of the Buchanan Northern hardwoods issue.
11	Bowater is to prepare a report for the OMNR by November 15, 2002, as part of the 2001-2002 Annual Report that compares planned and actual harvest levels, and identifies surplus areas or volumes to be made available in the last two years of the current plan term.	Complete.	Complete.
12	Due to the potential dangers to public safety and environmental integrity, Bowater and the OMNR are to develop a mutually acceptable procedure for promptly identifying and	Complete.	A procedure has been completed. However, we were concerned with the passive approach to roads monitoring (public reporting) and a recommendation is provided in Section 3.4.6.

	conspicuously marking road safety hazards immediately upon their discovery.		
13	Subject to the findings of the Forest Roads and Water Crossing Task Team, Bowater and OMNR should determine liability and maintenance responsibility for all primary and secondary roads on the Dog River – Matawin Forest.	On-going.	At the time of the audit the determination of liability and maintenance responsibility was still under negotiation (Section 3.4.6.).
14	Bowater is to collaborate with the OMNR and local stakeholders in the development of a strategic roads action plan. This may involve the review and revision of the company's current internal plan.	On-going.	There was no road strategy other than a natural abandonment policy and response to safety concerns if required. A recommendation with respect to monitoring the condition of abandoned roads is provided in Section 3.4.6.
15	Bowater and OMNR are to review the workloads of their staff and determine what additional human resources are required to meet their obligations.	Complete.	Reviews were completed. We believe that OMNR compliance activities are not adequate. A recommendation is provided in Section 3.6.1. Bowater and OMNR staff indicated that staff levels constrained the ability to deliver some forest management functions (i.e. surveys, compliance inspections).
16	As part of the implementation of their new information system,	Complete.	Bowater had implemented an effective GIS system for silvicultural records

	Bowater is to improve record accuracy within their information systems by developing procedures for data validation and quality control.		maintenance and tracking. However, the auditor notes that problems with record accuracy remain. A recommendation is provided in Section 3.6.2.
17	Bowater is to implement a program to monitor and assess post-renewal areas on a regular basis, based on risk assessment, until free-growing standards are reached.	On-going.	Bowater had implemented a post-cut silvicultural prescription program to address this recommendation. We determined that the competitive nature of many of the sites on the Forest warranted earlier silvicultural interventions than had occurred. We viewed several sites where a better return on silvicultural investment could have been realized by a more timely intervention to tend artificial renewal sites or naturally regenerating areas, in order to implement their post-cut silvicultural prescription program more effectively and avoid undue additional investment in remedial silvicultural interventions (i.e. infill planting). We determined that Bowater needs to be more diligent in the monitoring of sites. This issue is discussed in Section 3.4.4. and a recommendation is provided.
18	Bowater is to take immediate steps to reduce the number of trespasses occurring on	Complete.	Bowater has re-drafted their SOPs and included work instructions dealing with boundary marking, use of

	its license area. Bowater is to provide training to its contractors and overlapping licensees on the proper establishment of harvest boundaries.		GPS and pre-cut block sign off. (Section 3.4.2.). Training has been provided to Bowater employees and the system is in place and functioning.
19	Bowater and OMNR should develop a mutually agreeable monitoring system for reportable timber and non-timber indicators.	On-going.	Advice is being provided to planning teams as part of OMNR training material.
20	Bowater is to undertake by November 1, 2001 a reconciliation and validation of the information reported in all the annual reports produced during the 1995-2000 term.	Complete.	Bowater reviewed and produced reconciled tables for ARs for the 1995-2000 term.
21	OMNR – Thunder Bay District shall ensure that annual reports are reviewed in a timely manner. The OMNR shall also ensure that all required components of the annual reports, especially those for which OMNR is responsible for completing, are included in the submitted reports.	On-going.	One Annual Report was submitted late. Content of ARs was inadequate and both OMNR and Bowater did not fully meet FMPM requirements. A recommendation is provided in Section 3.6.2.
22	The trustee is to expediently settle reimbursements in compliance with the Forest Renewal Trust Agreements.	Complete.	Complete.

23	The company is to maintain the required minimum balance in its Forest Renewal Trust fund account on March 31 of each year, as required by the trust agreement.	Complete.	With the exception of a shortfall of $ 349.18 in 2005, the minimum required balance was maintained over the audit period.
24	A comprehensive review of the renewal rate currently being assessed for the Dog River – Matawin Forest should be undertaken and adjustments made, if necessary.	Complete.	Complete.
25	OMNR should undertake a review of trust fund activity on the Dog River – Matawin Forest. Such a review would include, but not be limited to: • Accounting, record keeping and disclosure. • Monthly and annual reporting (to company, OMNR, and other stakeholders). • Use of funds. • Appropriateness of transfers between funds. • Timing of payments from the fund. Action required when minimum balances are not maintained or negative balances exist.	Complete.	Complete.

26	The OMNR is to ensure compliance with the provisions listed in paragraph 6.11 and 6.14 of the amended Forest Renewal Trust Agreement for the years ended March 31, 1998, 1999, and 2000.	Complete.	Complete.

Table 11 presents the actions taken by Bowater and OMNR to address the suggestions made in the previous IFA.

Table 11. Actions taken by Bowater and OMNR in response to the 1995-2000 Independent Forest Audit Suggestions.

Sug #	IFA Suggestion	Status Report on Suggestion (July 2003)	Auditor Observation
1	The OMNR Thunder Bay District Office should devise a system that provides an indication that appropriate staff has reviewed all forest management plan amendments.	Complete.	An Integrated Resource Management comment sheet was developed and attached to all amendments.
2	The OMNR, with the participation of the planning team, should process one amendment that identifies where special tertiary road conditions are not required on the Dog River Matawin Forest.	Complete.	An amendment was processed.
3	Bowater should correct discrepancies between the RPFO	On-going.	Bowater reviewed and produced reconciled tables for ARs for the 1995-2000 term. The RPFO for

	and the annual reports, and adopt proper tracking and reporting procedures to ensure future consistency.		1990-97 was resubmitted.
4	When preparing the RPFO, Bowater should develop meaningful recommendations that can be related to the objectives and strategies in the approved management plan.	On-going.	Meaningful objectives and strategies were included in 1995-2000 RPFO. Recommendations and strategies were used in the development of the 2005 FMP.
5	The Forest Renewal Trust statements should include detailed explanations for disbursements described as "fees and expenses". Statements should also identify the fees being charged to manage the trust fund account.	Complete.	The OMNR supplied the trustee with descriptive statements which clarified fees and expenses.

4.0. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

A total of 16 recommendations and 1 suggestion are made to Bowater and/or OMNR to address issues identified during the audit.

In making our final audit decision we assessed the auditees' performance relative to the planning, consultation and implementation of the 2000 FMP and the planning and public consultation processes for the 2005 FMP.

Section 2.1. of this report outlines the principles against which the performance of the forest manager is measured. A principle was deemed to have been met if no serious issues were identified with the auditees' performance during the audit period. The principle was considered not to have been met if there were significant shortcomings with respect to

adherence to IFAPP requirements. A summary of conclusions related to the eight IFAPP guiding principles follows.

Commitment

Bowater policy documents met the requirements of the IFAPP.

There was a formal Environmental Management System (EMS) that established standards, responsibilities, training, and monitoring for all aspects of its business including sustainable forestry. Bowater had obtained ISO 14001 Registration, and SFI certification. There were effective training programs and communication with employees and contractors.

The Thunder Bay OMNR had complied with all OMNR policies and directions associated with forest sustainability, and staff had been provided with the required training and information.

Public Participation

2000 Forest Management Plan:

Public participation in the 2000 FMP planning process met the requirements of the FMPM.

A LCC was properly established, and was involved in the preparation of the plan. The planning process provided the required opportunities for input from stakeholders and the general public. First Nations were provided the opportunity to participate in the FMP planning process. The OMNR substantially met EA Condition # 77.

2005 Forest Management Plan:

The 2005 FMP planning and public consultation process did not meet FMPM requirements:

- The FMP initially submitted for approval was rejected by OMNR as unsustainable. A modified plan with significant changes to the long-term strategic direction of the Forest was negotiated between OMNR with the Company. The OMNR approved the plan with the new SMA.
- The approved plan contained the LCC statement that had been prepared for the rejected plan. LCC members indicated to us that they did not fully understand what they were endorsing.

- The OMNR decided that the new SMA would not be submitted for public review. The Plan Author expressed concern about the necessity for the creation of the negotiated SMA, and the absence of a public review.

Our conclusion is that the public, the full planning team, and the LCC should have been notified that the SMA had changed, and the public should have been provided with the opportunity to review it. Our rationale for this conclusion is as follows:

- The rejection of an FMP for reasons of sustainability at the Final Plan Submission Stage is a significant and highly unusual event.
- The new SMA made significant changes to the long-term strategic direction of the forest.
- The formal public review process was for a SMA that was not used in the plan.
- The LCC was not involved in the creation or review of the new SMA.

In response to this major shortcoming a recommendation is provided which requires the OMNR to provide the public and LCC with an opportunity to review and comment on the approved SMA.

First Nations were provided the opportunity to participate in the FMP planning process. The OMNR substantially met EA Condition # 77.

Forest Management Planning

2000 Forest Management Plan:

The 2000 FMP planning process was in accordance with FMPM requirements.

We determined that initial submissions of Annual Work Schedules lacked required information, and contained a large number of inaccuracies.

2005 Forest Management Plan:

The 2005 planning process was critically flawed and did not fully meet FMPM requirements.

These issues included:

- Disagreement over the use of the FOCIS wood supply model.
- Disagreement with respect to the desired wood supply and marten habitat requirements.
- Disagreement over the implementation of marten guidelines.
- Missed deadlines (e.g. Invitation to Participate target date delayed four times).
- Late delivery of material from OMNR (e.g. marten core areas) to the planning team.
- A lack of decision-making.
- Disagreement over the planning team Terms of Reference which resulted in delays in the consultation schedule.

Plan Implementation

The implementation of the 2000 FMP was substantially in compliance with the FMPM requirements. However, there were a number of shortcomings:

- Annual Reports had to be re-submitted a number of times (3 out of 5 years) before receiving approval by the OMNR DM.
- Compliance infractions were more frequent (approximately five times) than those on similar-sized Forests in Ontario.
- OMNR completed approximately 10% of the compliance inspections on the Forest. Given the significant number of infractions OMNR should be conducting more inspections.
- The suspension of harvest blocks created problems for compliance monitoring, and resulted in a public perception that wood was being wasted. At the time of the audit compliance reporting has not been completed for over 100 harvest blocks.
- The practice of suspending blocks compromised silviculture effectiveness on the Forest. Competing vegetation was often established on sites prior to renewal treatment, and areas of piled wood were not available for treatment.
- Bowater's silvicultural tracking/assessment program needs improvement particularly for mixed wood sites.
- Bowater yield predictions were routinely optimistic. During the audit period actual volumes per ha were approximately 30% less than forecasted.

- The large area classified as depleted (approximately 20% of the forest) is a concern, particularly in light of the projected future wood supply issues on the Forest.
- A monitoring program is lacking for inactive and abandoned roads.

System Support

Bowater and OMNR had effective record keeping systems, however, accuracy and completion of some documents was an issue.

Both OMNR and Bowater had effective training programs in place. Bowater and OMNR had experienced staff with good knowledge of the Forest.

Monitoring

OMNR compliance monitoring was inadequate given the level of management activity and the high incidence of NIC reports. Bowater conducted an adequate number of compliance inspections.

Bowater needs to improve its silvicultural tracking/assessment program generally, and in particular, for mixed wood sites scheduled for conifer renewal or enhancement to facilitate earlier assessments and treatment of competition.

OMNR and Bowater did not fulfill their requirements to submit Forest Operations Compliance Information System (FOCIS) and Forest Operations Information Program (FOIP) reports on time.

The 2000 IFA contained recommendations directed at the completeness, accuracy, and timely submission of Annual Reports. Similar issues continued to exist in this audit term.

Achievement of the Management Objectives and Forest Sustainability

The 2000 FMP largely met the FMPM criteria used in the determination of forest sustainability. The findings of the field audit also supported the sustainability conclusion. Nevertheless, during the audit several issues were identified with respect to the long-term marten habitat requirements and increasingly constrained wood supplies. Future wood supply issues are compounded by the existing fragmentation and age class imbalances. These issues, if not managed, could lead to long term negative impacts on the sustainability of the Forest.

The 2005 FMP continues the deferral of a harvest reduction on the Forest in anticipation that future models, improvements in the forest inventory, and new

knowledge will result in additional wood supply being identified. It is our conclusion that this approach has a high element of risk.

Contractual Obligations

Bowater did not fully meet its contractual obligations.

Shortcomings included issues with respect to wood supply commitments, inaccurate reporting in some required documents and the submission of an FMP for approval that the OMNR deemed unsustainable. Last minute negotiations resulted in an approved FMP which required the significant involvement of the OMNR.

Renewal Trust Account projects (Specified Procedures Report) had all required information. The conditions in the field matched the records in the office.

Bowater and the OMNR worked cooperatively with aboriginal communities.

5.0. AUDIT CONCLUSION

Section 2.1. of this report outlines the principles against which the performance of the forest manager is measured. In making our final audit decision we weighed the auditees' performance relative to the planning, consultation and implementation of the 2000 FMP, and planning and public consultation processes for the 2005 FMP. While the development and implementation of the 2000 FMP substantially met requirements it also raised a number of long term sustainability issues. These issues, combined with the flawed 2005 planning process make it impossible to recommend licence renewal.

With full consideration of our audit findings we conclude that Bowater was not adequately in compliance with the legislation, regulations, and policies that were in effect at that time. We recommend the following:

Recommendation # 16 / Conclusion:

The auditor recommends that the Minister not extend SFL # 542459 for a further five-year term.

Table 12. Summary of Recommendations and Suggestions

Principle 1: Commitment
No Recommendations or Suggestions.
Principle 2: Public Participation
Recommendation # 1: The OMNR Thunder Bay District Manager should ensure that the LCC is provided with adequate time, and all information necessary to fully comprehend, properly discuss, and develop committee consensus to meet its obligations in the preparation of future forest management plans. ***Recommendation # 2:*** For the 2005 FMP, the OMNR District Manager should immediately; 1) Review the approved plan and the SMA with the LCC. 2) Correspond with individuals and organizations on the FMP mailing list to: • Explain the rationale for the rejection of the original SMA. • Identify the changes associated with the approved SMA. • Invite the public to review and comment on the approved SMA. 3) Provide the public with the opportunity to comment by means of a posting on the Environmental Registry.
Principle 3: Forest Management Planning
Recommendation # 3: Bowater should ensure that the forecast of silvicultural operations contained in the FMP approximates the mix of silvicultural intensities prescribed in SFMM for the next planning period. ***Recommendation # 4:*** Bowater must ensure that the information provided in Annual Work Schedules is complete, accurate, and consistent with the FMP.

Suggestion # 1:

Bowater should finalize existing draft Resource Stewardship Agreements with tourism operators within 12 months of the submission of this audit report.

Principle 4: Plan Implementation

Recommendation # 5:

Bowater should continue to evaluate and increase the accuracy of yield curve predictions used for forest management.

Recommendation # 6:

The OMNR District Manager should continue to work with Bowater and the traditional crown operators towards finalizing agreements to resolve long standing issues.

Recommendation # 7:

Local OMNR and Bowater must develop a protocol with respect to "suspended blocks" to ensure that harvested wood is hauled in a timely manner and that routine silvicultural operations are not adversely affected.

Recommendation # 8:

Bowater should accelerate its survey program for depleted lands and determine the status of these areas for incorporation into the FRI.

Recommendation # 9:

Bowater must increase its silvicultural tracking and effectiveness monitoring program and when warranted implement follow-up silvicultural treatments without delay.

Recommendation # 10:

Bowater should develop and implement an active roads monitoring program for abandoned roads during the 2005 FMP term.

Principle 5: Systems Support

No Recommendations or Suggestions.

Principle 6: Monitoring
Recommendation # 11: OMNR should significantly increase its monitoring activities on the Forest. Compliance monitoring targets established by OMNR should approximate 20% of the total number of annual inspections carried out on the Forest. ***Recommendation # 12:*** OMNR and Bowater should ensure that compliance standards are consistently applied. ***Recommendation # 13:*** OMNR and Bowater should meet FIM requirements for compliance reporting. ***Recommendation # 14:*** OMNR and the Bowater should ensure that Annual Reports meet FMPM requirements.
Principle 7: Achievement of Management Objectives and Forest Sustainability
No Recommendations or Suggestions.
Principle 8: Contractual Obligations
Recommendation # 15: Bowater should ensure that wood supply commitments in Appendix E of its SFL are met. OMNR should monitor the implementation of commitments and take action where required.
Summary of Conclusions and Recommendations
Recommendation # 16 / Conclusion: The auditor recommends that the Minister not extend SFL # 542459 for a further five-year term.

APPENDIX A

COMPARISON & TRENDS ANALYSIS OF PLANNED VS. ACTUAL FOREST OPERATIONS

The Comparison and Trends Analysis of Planned vs. Actual Forest Operations is prepared by the forest manager (Bowater Canadian Forest Products Inc.) responsible for forest management on the Forest. It is included in this report without modification or adjustment by the audit team.

Comparison and Trend Analysis of Planned Versus Actual Forest Operations Report

for the

Dog River Matawin Forest

SFL # 542459

As required by the Independent Forest Audit Protocol 2005

Prepared by:

Jim Miller R.P.F.

Signature:

Date: August 3, 2005
Revision Date: December 6, 2005

Comparison and Trend Analysis of Planned Versus Actual Forest Operations Report
For the
Dog River Matawin Sustainable Forest License Area

Introduction

The preparation of this report is a requirement of the Independent Forest Audit Protocol for the conduct of the Dog River Matawin Forest audit covering the five-year FMP period 2000 – 2005. The comparison and trend analysis report incorporates the FMP that was in place as of March 31st of 2005 and the two previous TMP periods.

Tables 3 and 4 of the comparison and trend analysis report are volume and area based tables, portions of which are derived from annual reports. The current actual harvest volumes and depletion area information was calculated from the five annual reports that covered the years 2000 – 01 to 2004 – 05. The draft copy of the spring portion of the annual report for the 2003 – 04 period has been completed and submitted to the MNR for their review. The annual report for 2004 – 05 was prepared for submission to the MNR in November of 2005.

The completion and submission of the annual report for 2004-05 has allowed for tables 3 and 4 to be up-dated from the original submission dated on August 3rd, 2005, with complete information for the period 2000-05. The information for the current plan in table 4 has been corrected by removing the forest unit hectares of the contingency area from the calculations. The information presented in the tables is now believed to be accurate and complete. This new table 4 reflects a significant change from the previous submission of the Trends Analysis for the Dog River Matawin Forest.

History of Licensing

The Dog River Working Circle (W.C.) and Matawin W.C. were individually licensed from the Crown to Bowater (formerly Great Lakes Paper Company) circa 1940. Both working circles were amalgamated into one Forest Management Agreement in 1985 at the request of the Ontario Ministry of Natural Resources. The size of the Dog River Matawin Forest was increased again in 1998. The former Crown Units at Shebandowan and Upsala were awarded to Bowater as a result of the expansion of Wabakimi Park into the former Brightsand and East Caribou Forests.

The Thunder Bay District of the Ontario Ministry of Natural Resources, Northwest Region, is responsible for the administration of the Dog River Matawin Forest License.

History of Forest Management Planning

The former Dog River and Matawin Working Circles were operated as Company Management Units until 1985. Bowater Inc. was responsible for planning and implementing harvesting and road construction activities. The

OMNR was responsible for planning and implementing renewal and maintenance, renewal support, tree improvement, compliance and renewal assessment for forest management. In 1985 Bowater Inc. became responsible for all forest management activities with the signing of the forest management agreement for the Dog River

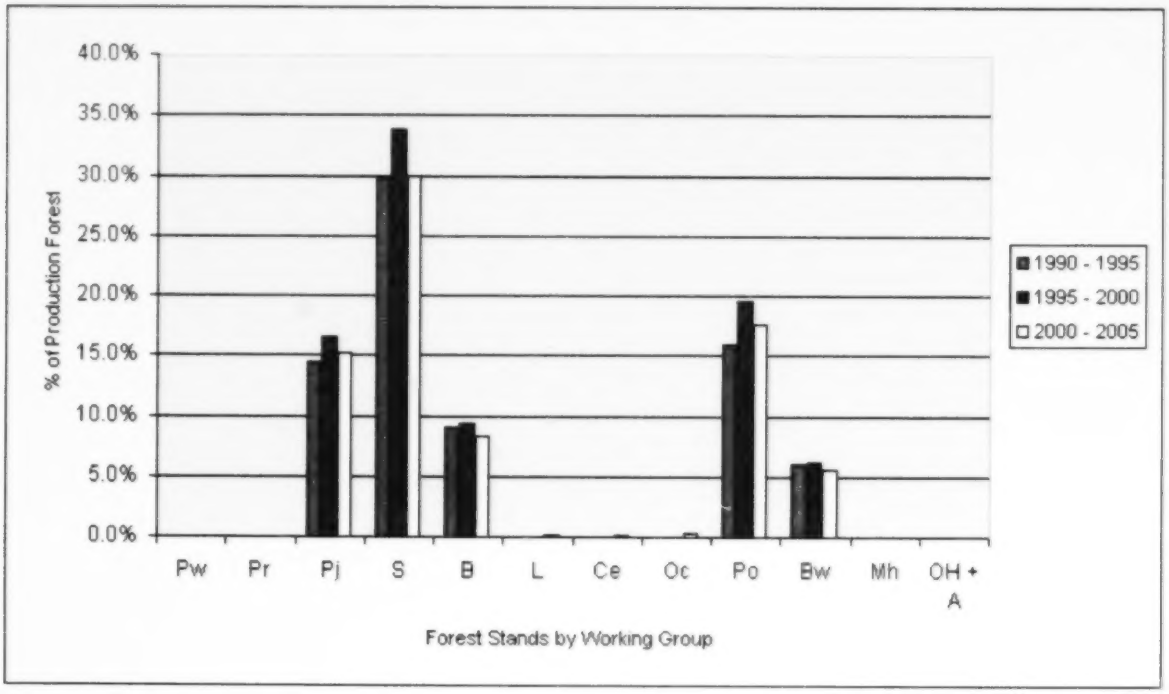
Matawin Forest. Funding arrangements for all silviculture activities were derived from the general revenue of the provincial treasury until 1996. The establishment of Sustainable Forest Licenses in 1996 created individual Trust Funds with dedicated funding to cover the cost of the silviculture program.

Operations for the 2 previous periods (1990-05 and 1995-2000) were conducted under the Timber Management Planning process. The plan for the current audit period (2000-05) was prepared under the Forest Management Planning guidelines.

Table 1 – Summary of Total Land Area

The increase in total forested land for the Dog River Matawin Forest can be attributed to the addition of the former Shebandowan and Upsala Crown Units to the land base. This officially occurred in 1998 when a new sustainable forest license was issued. The area summary of all crown land (table 4.8.2) for the 1995 – 2000 TMP would not have included this area for the original submission of the plan. The land base for the Dog River Matawin Forest increased by 53,414 ha with the addition of the former Crown Units, which would amount to a 7.0%, increase to the total forested land.

2005 Independent Forest Audit
Figure 1b - Total Production Forest by Working Group
SFL: Dog River Matawin



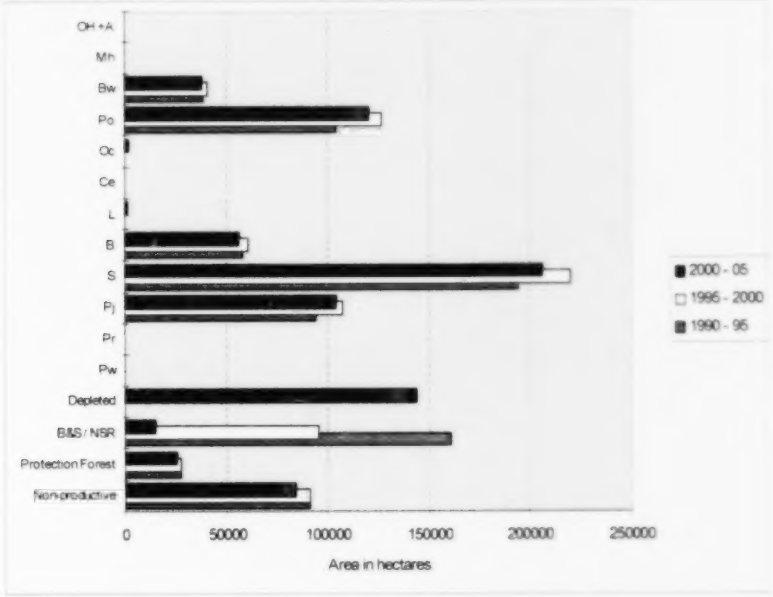
2005 Independent Forest Audit
Table 1b - Total Production Forest by Conifer and Hardwood Working Group Percentages
SFL: Dog River Matawin

	1990-1995		1995-2000		2000-2005	
	Area (ha)	Percent (%)	Area (ha)	Percent (%)	Area (ha)	Percent (%)
Conifer (Pw, Pr, Pj, S, B, La, Ce, Oc) Working Groups	347,455	70.8	388,653	69.9	370,829	69.9
Hardwood (Po, Bw, Mh, Oh + A) Working Groups	143,100	29.2	167,407	30.1	159,438	30.1
Total Production Forest (Excluding B&S, NSR and Depleted - Not Classified by Working Group	490,555		556,060		530,268	

2005 Independent Forest Audit
Table 1 - Summary of Total Area Under Management

Past and Current Plans - Crown Managed
DOG RIVER MATAWIN

Land Type			Area in hectares		
			Past Plans		Current
		Plan Term	1990 - 95	1995 - 2000	2000 - 05
Water			104,461	104,780	111,714
Non - Forested Land			4,097	4,627	5,610
Forested					
Non-productive			91,001	90,868	84,337
Productive					
Protection			27,731	27,524	26,006
Production Forest					
	B&S / NSR		160,615	95,166	14,989
	Depleted		0	0	143,626
	Forest Stands by Working Group				
	Pw		35	35	310
	Pr		0	0	322
	Pj		94,385	107,334	104,364
	S		194,233	220,150	205,792
	B		58,642	60,974	56,459
	L		0	0	1,149
	Ce		0	0	753
	Oc		160	160	1,682
	Po		104,077	126,862	120,805
	Bw		39,023	40,545	38,574
	Mh		0	0	0
	OH + A		0	0	60
Total Production Forest			651,170	651,226	688,785
Total Forested Land			769,902	769,618	799,130



Source: FMPM Table FMP-1, FMP-2
TMPM Table 4.8.2

Figure 1 indicates that there has been no major shift in working groups over the 3 term planning periods. The slight increase in spruce, jack pine, and poplar for the 1995 – 2000 plan would be the result of the Free to Grow surveys conducted from 1990 to 1994. The addition of the former Crown Units to the land base may explain the decline in these working groups for the 2000 – 2005 forest management plan.

The reduction in the B&S/NSR for the 1995 – 2000 period is a result of the FTG surveys conducted from 1990 to 1993. During that period 100,950 ha of former NSR 2 & 3 lands were assessed as free to grow and put back into the FRI inventory. Surveys conducted in 1998 and 1999 as well as from 2000 to 2004 put 42,188 and 39,181 ha of former depletions back into the inventory.

Table 1b also illustrates the point that the component of conifer to hardwood has remained unchanged for the Dog River Matawin Forest. This forest will continue to be managed as a conifer dominant forest that is representative of the boreal forest.

Table 2 – Description of Forest Units

The working group or forest units have evolved with the preparation of each separate plan. For the 1995 – 2000 period the forest units were further complicated by trying to separate younger stands from older stands within several different forest units. This was done in an attempt to continue to deplete the "oldest first" in the spruce and poplar forest units for the 1995 – 2000 TMP. The forest units used for the 2000 – 2005 FMP are very similar to the current provincial standards since they are ecologically based.

2005 Independent Forest Audit
DOG RIVER-MATAWIN 1990-2010 TMP
Table 2 - DESCRIPTION OF FOREST UNITS (TMPM 4.11)

Forest Unit Code	Name	Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria	Additional Information
P_J	Jack pine working group	P_J with Pr.Pw.Bf.Sp.Bw.Po	Jack pine	deep mineral soils (clays,silts,loams)	clearcut	WG = P_J and SC = X.1.2.3	P_J dominant composition
		P_J with Pr.Pw.Bf.Sp.Bw.Po	Jack pine	deep mineral soils (boulder tills,gravel sands)	clearcut	WG = P_J and SC = X.1.2.3	
		P_J with Pr.Pw.Bf.Sp.Bw.Po	Jackpine	blow sands/aeolian deposits	clearcut	WG = P_J and SC = X.1.2.3	
		P_J with Pr.Pw.Bf.Sp.Bw.Po	Jackpine	mineral soil (10 -20 cm deep on > 50% of area)	clearcut	WG = P_J and SC = X.1.2.3	
		P_J with Pr.Pw.Bf.Sp.Bw.Po	Jackpine	mineral soil (< 10 cm deep on > 50% of area)	clearcut	WG = P_J and SC = X.1.2.3	
Po	Poplar working group	Po with P_J.Sp.Po.Bf.Bw.Pr.Pw	Poplar	deep mineral soils (clays,silts,loams)	clearcut	WG = Po and SC = X.1.2.3	Po dominated composition
		Po with P_J.Sp.Po.Bf.Bw.Pr.Pw	Poplar	deep mineral soils (boulder tills,gravel sands)	clearcut	WG = Po and SC = X.1.2.3	
		Po with P_J.Sp.Po.Bf.Bw.Pr.Pw	Poplar	mineral soil (10 -20 cm deep on > 50% of area)	clearcut	WG = Po and SC = X.1.2.3	
		Po with P_J.Sp.Po.Bf.Bw.Pr.Pw	Poplar	mineral soil (< 10 cm deep on > 50% of area)	clearcut	WG = Po and SC = X.1.2.3	
Sb	Spruce working group	Sp with P_J. Bf. Po	Spruce	deep mineral soils (clays,silts,loams)	clearcut	WG Sb/Sw and SC = X.1.2	Spruce dominated composition
		Sp with P_J. Bf. Po	Spruce	deep mineral soils (boulder tills,gravel sands)	clearcut	WG Sb/Sw and SC = X.1.2	
		Sp with P_J. Bf. Po	Spruce	mineral soil (10 -20 cm deep on > 50% of area)	clearcut	WG Sb/Sw and SC = X.1.2	
		Sp with P_J. Bf. Po	Spruce	mineral soil (< 10 cm deep on > 50% of area)	clearcut	WG Sb/Sw and SC = X.1.2	
		spruce with La	Spruce	organic soil	clearcut	WG Sb and SC = 3 or with La & Ce	
Bw	Birch working group	Bw with Sp.Bf.Po.Pr.Pw	Birch	deep mineral soils (clays,silts,loams)	clearcut/partial cut	WG = Bw and SC = X.1.2.3	Birch dominated composition
		Bw with Sp.Bf.Po.Pr.Pw	Birch	deep mineral soils (boulder tills,gravel sands)	clearcut/partial cut	WG = Bw and SC = X.1.2.3	
		Bw with Sp.Bf.Po.Pr.Pw	Birch	mineral soil (10 -20 cm deep on > 50% of area)	clearcut/partial cut	WG = Bw and SC = X.1.2.3	
		Bw with Sp.Bf.Po.Pr.Pw	Birch	mineral soil (< 10 cm deep on > 50% of area)	clearcut/partial cut	WG = Bw and SC = X.1.2.3	
Pr.Pw	Pr/Pw working group	Pr.Pw with Sp.Po.P_J.Bw.Bf	Pr/Pw	deep mineral soils (clays,silts,loams)	clearcut/partial cut	WG = Pr or Pw	Pr/Pw dominated composition
		Pr.Pw with Sp.Po.P_J.Bw.Bf	Pr/Pw	deep mineral soils (boulder tills,gravel sands)	clearcut/partial cut	WG = Pr or Pw	
		Pr.Pw with Sp.Po.P_J.Bw.Bf	Pr/Pw	mineral soil (10 -20 cm deep on > 50% of area)	clearcut/partial cut	WG = Pr or Pw	
		Pr.Pw with Sp.Po.P_J.Bw.Bf	Pr/Pw	mineral soil (< 10 cm deep on > 50% of area)	clearcut/partial cut	WG = Pr or Pw	
Mixed Wood	Mixed wood working group	mixed composition with P_J.Sp.Po.Bf	various	deep mineral soils (clays,silts,loams)	clearcut	any WG with mixed composition identified as a mixed wood block - not specifically coded for subdivision with specific area/volumes in TMP tables- determined on an AWS basis	manage for both conifer and hardwood - no herbicide release in identified blocks
		mixed composition with P_J.Sp.Po.Bf	various	deep mineral soils (boulder tills,gravel sands)	clearcut		
		mixed composition with P_J.Sp.Po.Bf	various	mineral soil (10 -20 cm deep on > 50% of area)	clearcut		
		mixed composition with P_J.Sp.Po.Bf	various	mineral soil (< 10 cm deep on > 50% of area)	clearcut		

Source: FMPM FMP - 8
TMPM table 4.11

2005 Independent Forest Audit
DOG RIVER-MATAWIN 1995-2015 TMP
Table 2 - DESCRIPTION OF FOREST UNITS (TMPM 4.11)

Forest Unit Code	Name	Forest Type(FEC)	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria	Additional Information
Pj	Jack pine	V17,V18	Jack pine	Dry-fresh mineral soils - all depths	clearcut	WG = Pj	Pj dominated stands
		V28,V29	Jack pine	Dry fresh sands S1,S2,SS5	clearcut	WG = Pj	
		V30,V32	Jack pine	Fresh mineral soils except sands -all depths	clearcut	WG = Pj	
Poy,Poo	Poplar-young, Poplar-old	V10,V11 mixed with Sb & Pj	Poplar	Dry-fresh sands S1,S2, SS5	clearcut	WG = Po	Poplar dominated stands
		V5,V6 - hardwood only	Poplar	All soils	clearcut	Poy - WG = Po and age < 101	
		V7,V8,V9	Poplar	All soils	clearcut	Poo - WG = Po and age >=101	
		V10,V11	Poplar	all soils except sands-all depths	clearcut		
Sly,Slo	Sp lowland-old,Sp lowland-young	V34,V35,V36,V37	Spruce (Sb)	wet organics, moist mineral soils; S12F,S12S,57-511	clearcut-strips/seed tree; CLAAG	Sly - WG = Sb and age < 141 Slo- WG = Sb and age >= 141	Spruce dominated stands
Suy,Suo	Sp upland-old,Sp upland-young	V19,V20	Spruce (Sb & Sw)	Fresh moist mineral soils-alldepths	clearcut	Suy- WG = Sb or Sw ang age < 111	Spruce dominated stands
		V30,V31,V33	Spruce (Sb & Sw)	Fresh moist mineral soils	clearcut	Suo- WG = Sb or Sw and age >=111	
Bw	Birch	V4	Birch	All soils	clearcut	WG = Bw	Birch dominated stands
		V6,V8	Birch	All soils	clearcut		
Pw	White Pine	V12	White Pine	All soils	shelterwood	WG = Pw	Pw dominated stands
	10 % Pw	All FU's with 10% Pw	various	All soils	clearcut-seed tree	any WG with stand composition >= 10% Pw	stands with 10% Pw
Bf	Balsam Fir	V14,V16	Balsam	Dry fresh sands-S1,S2,SS5	clearcut	WG = Bf	Balsam dominated stands
		V14,V16	Balsam	All soils except sands	clearcut		

Footnotes: (1) "FEC" type relates to the Vegetation "V" types identified in the "Forest Ecosystem Classification for Northwestern Ontario"

2005 Independent Forest Audit
DOG RIVER-MATAWIN 2000 2020 FMP
Table 2 - DESCRIPTION OF FOREST UNITS (FMP 8)

Forest Unit Code	Name	Forest Type	Main Working	Site Type(s)(Ecosite)	Silvicultural System	FRI Parameters & Criteria	Additional Information
PW	White Pine	Conifer	White Pine	ES11,ES15,ES18,ES24	Selection	stands with Pw >= 30% Pw composition	all site classes - any stand meeting the criteria
OH	Other Hardwood	Hardwood		ES30,ES38	Selection	stands with composition of Ash,Maple,Elm,Yellow Birch >= 30%	Stands with these Great Lakes St. Lawrenece species >=30%
PR	Red Pine	Conifer	Red Pine	ES11,ES15,ES18,ES24	Selection	Stands with Pr >=30%	all site classes- any stand meeting this criteria
OC	Other Conifer	Conifer		ES17,ES37	clearcut	stands with composition Ce+ La >=60%	Ce/La dominated stands
SPL	Spruce Lowland	Conifer	Spruce Black	ES34,ES35,ES36	clearcut	(Sb working group stands where Sb composition >= 70%) or (Sb working group and Ce+La >=10%) OR (working group is Sb and SC = 2 and species composition is 100% Sb)	Black spruce lowland sites
PJ	Jack Pine	Conifer	Jack Pine	ES12,ES13,ES14,ES20,ES25	clearcut	stands with Pj >=70%	Purer Pj stands
PO	Poplar	Hardwood	Poplar	ES16,ES19,ES23,ES28,ES29	clearcut	stands with poplar composition >= 70%	Purer Poplar stands
BW	White Birch	Hardwood	Birch	ES16,ES19,ES28	clearcut	stands with Bw composition >= 70%	Purer Bw stands
BF	Balsam Fir	Conifer	Balsam Fir	ES21,ES27,ES32	clearcut	stands with Bf >= 60%	Purer Bf stands
SPU	Spruce Upland	Conifer	Sb or Sw	ES12,ES20,ES22,ES26	clearcut	stands containing Sb+Sw >= 70% and Po + Bw <= 20%	Upland spruce
MC1	Mixed Conifer 1	Conifer	varied	ES14,ES20,ES22,ES25,ES26,ES31	clearcut	Stands with conifer composition >= 50% with Po <= 20%	mixed conifer stand with minor component of Po
MC2	Mixed Conifer 2	Conifer	varied	ES21,ES27,ES32	clearcut	Stands with conifer composition >= 50% with Po > 20%	mixed conifer stand with significant component of Po
MH	Mixed Hardwood	Hardwood	varied	ES16,ES19,ES23,ES28	clearcut	Stands with hardwood composition >= 50%	Mixed hardwood stands
NFG	Non-Free-To-Grow	not categorized	not categorized	any			depleted areas (natural or harvested) or NSF areas not FTG

Footnotes: (1) Forest Types derived from "Terrestial and Wetland Ecosites of Northwestern Ontario" - NWST Field Guide FG-02

Table 3 – Summary of Planned and Actual Harvest Volumes

The Dog River Matawin Forest is important for the Bowater mill operations because of its proximity to the city of Thunder Bay. The graph of the actual harvest volumes displays an increasing tendency when compared to the 3 planning periods. Previous Independent Forest Audits have been critical of the actual harvest volumes recovered from this forest when compared to the forecasted volumes for the two previous TMP's.

The increase in actual harvest volume from the previous period can be attributed to several factors. The Nipigon 10 fire in 1999 resulted in a Bowater contractor moving onto the Dog River Matawin Forest to replace fibre supply lost from the Black Sturgeon Forest. The Buchanan sawmills increased their consumption when compared to 1995 – 2000 period. Bowater increased its field chipping capacity to replace chip supplies that were lost due to labour disputes at local sawmills. During half load restrictions on local highways two independent contractors moved onto the Dog River Matawin Forest to continue to provide fibre to the Bowater pulp mill. Finally, the construction of the Bowater sawmill on the Fort William First Nation industrial park forced Bowater to increase field chipping again. The new sawmill required a tree length inventory prior to operating and a supply of chips were required to replace wood diverted to the new sawmill.

The dramatic increase in birch utilization over the 2000 – 05 period is a result of the mill improving their pulping process in order to allow the use of birch in hardwood kraft to meet the quality demands of their customers. The reduction in balsam utilization is directly related to the large spruce budworm infestation of the late 1980's and early 1990's.

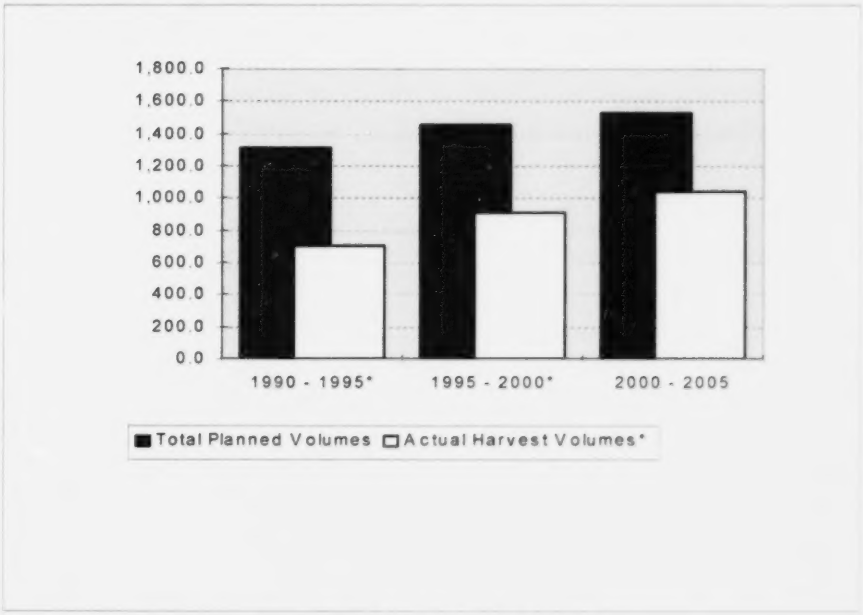
The "current" actual harvest volume has been derived from the AR-5 table of the annual report for 2004-05. The TREE numbers for the 2004-05 AR include the volume for the current year (2004-05) and a to date total for the 2000-05 FMP period.

Spruce	399,422.0	510,900.0	455,660.0
Balsam	179,606.0	103,300.0	181,780.0
Jack Pine	304,576.6	257,000.0	420,640.0
Tamarack	760.2	0.0	7,000.0
R & W Pine	3,100.0	0.0	3,460.0
Poplar	420,595.8	498,200.0	390,500.0
Birch	1,192.8	82,400.0	72,840.0
Total Planned Volumes	1,309,254.0	1,451,800.0	1,531,880.0

Actual Harvest Volumes

Volumes are Annualized for the indicated 5 year period

	Volume in '000's cubic metres		
	Past Plans		Current
Species	1990 - 1995	1995 - 2000	2000 - 2005
Spruce	200,322.0	301,710.2	350,227.5
Balsam	66,617.4	44,729.2	57,807.0
Jack Pine	221,560.2	301,777.4	315,293.0
Tamarack	158.6	2,446.4	2,879.0
R & W Pine	2,470.0	204.0	279.0
Po;lar	213,342.8	256,962.0	263,135.0
Birch	1,620.4	1,936.6	49,736.0
Total Actual Volumes	706,091.4	909,765.8	1,039,516.0



Source: planned: TMPM Table 4.18.1, FMPM Table FMP-21
actual: TMPM Table 4.3.1, FMPM RPFO-4, annual reports

Table 4 – Summary of Planned and Actual Depletion Area

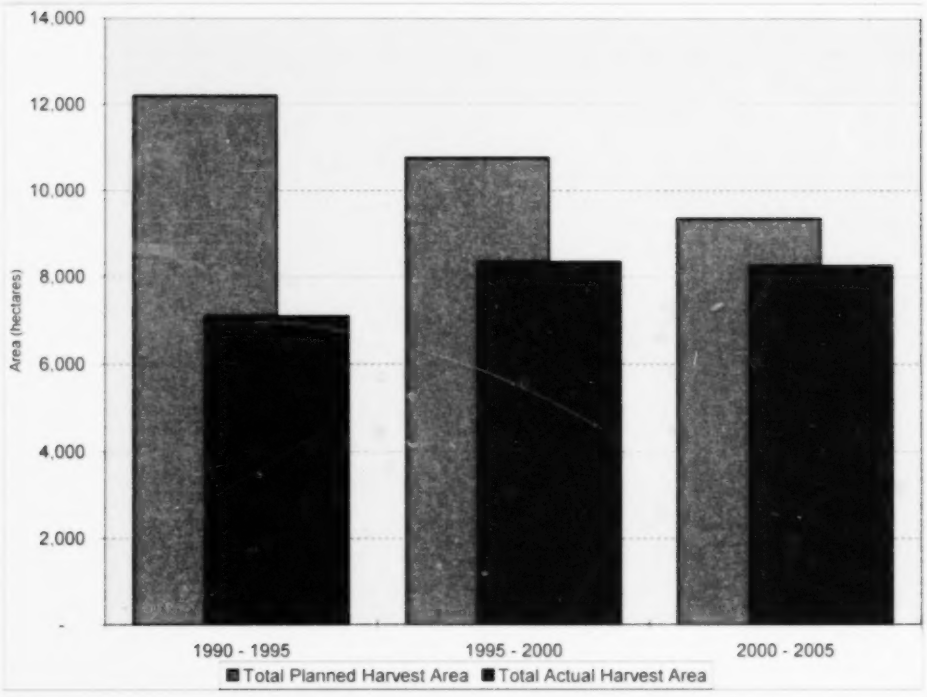
The planned versus actual depletion area graph indicates that the actual level of harvest depletion is approaching the forecasted area available for harvest at the end of the current planning term. The actual level of harvest since 1995 has remained constant. The future trend for the Dog River Matawin Forest would be to maximize the forecasted harvest area for any new forest management plans. This trend would emphasize the significance of the Dog River Matawin Forest to Bowater's operations since the forest presently supplies 25% of the mill fibre consumption in Thunder Bay. The concern for future planning periods will be the establishment of a sustainable harvest level for the Dog River Matawin Forest.

The slight decrease in planned harvest area from the 1990 – 95 period can be attributed to the accelerated cut of "oldest first" during that period.

2005 Independent Forest Audit
Table 4 - Summary of Planned & Actual Depletion Area
DOG RIVER MATAWIN FOREST

Plan Term	Planned Annual Harvest Area			Actual Depletion Area		
	Area in hectares (Area is Annualized)			Area in hectares (Area is Annualized)		
	Past Plans		Current	Past Plans		Current
	1990 - 1995	1995 - 2000	2000 - 2005	1990 - 1995	1995 - 2000	2000 - 2005
Forest Unit	Planned	Planned	Planned	Harvest	Harvest	Harvest
Spruce	2,553.7			1,742.9	64.3	
Balsam & OC	1,777.6			675.0		
Jack Pine	3,51.2	1,734.4	1,462.2	1,997.1	1,802.2	1,404.0
Slo		645.0			286.6	
Sly		993.6			839.0	
Suo		837.8			482.1	
Suy		1,524.6			1,244.4	
Birch	918.0	687.8	38.0	309.3	335.1	48.0
Poplar	3,100.0		343.2	2,359.4	181.6	368.0
Old Poplar		1,521.2			1,027.4	
Prime Poplar		1,554.0			1,356.2	
Mixed Conifer 1			1,649.8			1,370.0
Mixed Conifer 2			938.1			875.0
Mixed Hardwood			2,047.9			1,877.0
Other Conifer			21.1		0.6	6.0
Spruce Lowland			799.3			621.0
Spruce Upland			1,281.5			1,121.0
Red Pine			0.0			0.4
White Pine			3.6			2.8
PJO						
PJP						
SPO						
SPP						
PWR				0.8	3.3	
Balsam Fir		1,261.0	706.0		714.1	559.0
Total Area:	12,200.5	10,759.4	9,340.7	7,084.5	8,336.9	8,252.2

Planned vs. Actual Harvest Area



Source: planned TMPM table 4.15.1 , table 4.15.2 and FMP - 18 for the periods 1990-95, 1995-2000, and 2000-05
actual TMPM table 4.1.1, table 4.1.2, RPFO-2 and AR-1 for 1990-95, 1995-2000 and 2000-05

Table 5 – Summary of Managed Productive Forest by Forest Unit

Any trends or changes in forest condition will be difficult to comment on since no consistent forest units have been used over the three plans in question. The Dog River Matawin Forest continues to be a conifer dominant forest with spruce being the major species followed by poplar and jack pine. Renewal programs have emphasized this point over the planning period. The component of poplar maybe reduced over time as some of the harvested areas that do not regenerate via coppice sprouting are converted to spruce or jack pine. Mixedwood management has also been recognized as one of the goals for this forest to help achieve biodiversity and wildlife objectives.

The determine continuity over the long term the provincial standard forest units will have to be used in subsequent plans to accurately reflect any major changes in the composition of the forest units for the Dog River Matawin Forest.

2005 Independent Forest Audit
DOG RIVER-MATAWIN 1990-2010 FMP
Table 5 – TMP 4.8.2, 4.8.3and 4.9 Summary of Crown Productive Forest by Forest Unit

Table 4.8.2

AREA SUMMARY OF ALL CROWN LAND
for the five-year term
FROM APRIL 1, 1990 TO MARCH 31, 1995

DOG RIVER MATAWIN FOREST
20 Apr-90

SUMMARY OF TOTAL AREA (Ha)		
WATER	104 461	
NON-FORESTED LAND	4 097	
FORESTED LAND		
NON-PRODUCTIVE FOREST	89 876	
PRODUCTIVE FOREST	672 946	762 822
TOTAL AREA		871 380

SUMMARY OF PRODUCTIVE FOREST (Ha)

WG/FU	PROTECTION FOREST SC 4 & ISLANDS	PRODUCTION FOREST					
		B&S AND/OR NSR 2-6	FTG LANDBASE			SUBTOTAL	TOTAL
			PFR	REGULAR	SUBTOTAL		
SB	16 300	71 967	2 462	189 990	192 452	264 419	280 719
BA	1 806	23 345	370	57 868	58 244	81 589	83 395
PJ	1	31 886	4 990	87 825	92 815	124 701	125 758
PO	057	26 012	4 280	98 949	103 229	129 241	135 964
BW	6 723	6 934	1 711	37 203	38 914	45 848	47 110
	1 262						
TOTAL	27 148	160 144	13 819	471 835	485 654	645 798	672 946

CONVERSION = 1 ACRE = .405 HECTARE

Table 4.8.3

AREA SUMMARY OF ALL PATENT LAND
for the five-year term
FROM APRIL 1, 1990 TO MARCH 31, 1995

DOG RIVER MATAWIN FOREST
20 Apr-90

SUMMARY OF TOTAL AREA (Ha)

WATER	0	
NON-FORESTED LAND	0	
FORESTED LAND		
NON-PRODUCTIVE FOREST	1 125	
PRODUCTIVE FOREST	7 273	8 398
TOTAL AREA		8 398

SUMMARY OF PRODUCTIVE FOREST (Ha)

WG/FU	PROTECTION FOREST SC 4 & ISLANDS	PRODUCTION FOREST				TOTAL
			FTG LANDBASE			
		B&S AND/OR NSR 2-6	PFR	REGULAR	SUBTOTAL	
SB	139	189		1 781	1 970	2 109
BA	63	81		398	479	542
PJ	216	0		1 570	1 570	1 786
OC	66	0		160	160	226
WP	0	0		35	35	35
PO	57	93		848	941	998
BW	42	108		109	217	259
TOTAL	583	471	0	4 901	5 372	5 955

TABLE 4.9

SUMMARY OF CROWN* PRODUCTION FOREST AREA BY AGE CLASS
for the FIVE-year term
FROM APRIL 1, 1990 TO MARCH 31, 1995

DOG RIVER MATAWIN FOREST

WORKING GROUP	AGE CLASS	AREA (HA)
SPRUCE	BS/NSR	71 967.0
	FTG-20	39 601.0
	21-40	1 401.5
	41-60	11 361.1
	61-80	24 874.1
	81-100	36 863.4
	101-120	33 220.6
	121+	45 130.3
	SUB TOTAL	264 419.0
BALSAM	BS/NSR	23 345.0
	FTG-20	3 901.3
	21-40	1 728.2
	41-60	11 728.2
	61-80	28 369.5
	81-100	10 036.1
	101-120	1 065.0
	121+	1 415.7
	SUB TOTAL	81 589.0
JACK PINE	BS/NSR	31 886.0
	FTG-20	19 552.8
	21-40	964.5
	41-60	9 427.6
	61-80	30 394.5
	81-100	23 835.8
	101-120	7 158.7
	121+	1 481.2
	SUB TOTAL	124 701.1
POPLAR	BS/NSR	26 012.0
	FTG-20	4 949.9
	21-40	346.4
	41-60	5 018.2
	61-80	22 678.6
	81-100	33 916.5
	101-120	25 740.8
	121+	10 579.1

	SUB TOTAL	129 241.5
BIRCH	BS/NSR FTG-20 21-40 41-60 61-80 81-100 101-120 121+	6 934.0 992.2 7 526.9 12 012.0 8 502.8 7 896.1 1 983.9
	SUB TOTAL	45 847.9
TOTAL		645 798.5

* FRI OWNERSHIP CODE 1

FTG: FREE TO GROW

BS/NSR: BARREN AND SCATTERED/NOT SUFFICIENTLY REGENERATED

2005 Independent Forest Audit
DOG RIVER-MATAWIN 1995-2015 FMP
Table 5 – TMP 4.8.2, 4.8.3and 4.9 Summary of Crown Productive Forest by Forest Unit

Table 4.8.2

AREA SUMMARY OF ALL CROWN LAND
for the five-year term
FROM APRIL 1, 1995 TO MARCH 31, 2000

DOG RIVER MATAWIN FOREST
27-Oct -94

SUMMARY OF TOTAL AREA (Ha)

WATER	104 780		
NON-FORESTED LAND	4 160		
FORESTED LAND			
NON-PRODUCTIVE FOREST	- - - - - - -	90 159	
PRODUCTIVE FOREST	- - - - - - -	672 952	763 111
TOTAL AREA			872 051

SUMMARY OF PRODUCTIVE FOREST (Ha)

WG/FU	PROTECTION FOREST SC 4 & ISLANDS	PRODUCTION FOREST					TOTAL
			FTG LANDBASE			SUBTOTAL	
		B&S AND/OR NSR 2-6	PFR	REGULAR	SUBTOTAL		
SB	16 304	43 245	2 462	216 192	218 654	261 899	278 203
BA&OC	1 807	1 223	376	59 821	60 197	61 420	63 227
PJ	1 084	23 766	4 990	100 961	105 951	129 717	130 801
PO	6 697	24 603	4 280	121 761	126 041	150 644	157 341
BW	1 262	1 793	1 711	38 614	40 325	42 118	43 380
TOTAL	27 154	94 630	13 819	537 349	551 168	645 798	672 952

Table 4.8.3

AREA SUMMARY OF ALL PATENT LAND
for the five-year term
FROM APRIL 1, 1995 TO MARCH 31, 2000

DOG RIVER MATAWIN FOREST
27-Oct -94

SUMMARY OF TOTAL AREA (Ha)		
WATER	0	
NON-FORESTED LAND	467	
FORESTED LAND		
NON-PRODUCTIVE FOREST	709	
PRODUCTIVE FOREST	5 798	6 507
TOTAL AREA	6 974	

SUMMARY OF PRODUCTIVE FOREST (Ha)

WG/FU	PROTECTION FOREST SC 4 & ISLANDS	PRODUCTION FOREST					TOTAL
		B&S AND/OR NSR 2-6	FTG LANDBASE				
			PFR	REGULAR	SUBTOTAL		
SB	48	339		1 357	1 496	1 835	1 883
BA	19	77	139	732	777	854	873
PJ	90	12		1 168	1 383	1 395	1 485
PW			45	35	35	35	35
OC	73		215	160	160	160	233
PO	114	100		776	821	921	1 035
BW	26	8		178	220	228	254
			45				
			42				
TOTAL	370	536	486	4 406	4 892	5 428	5 798

TABLE 4.9

SUMMARY OF CROWN* PRODUCTION FOREST AREA BY AGE CLASS
for the FIVE-year term
FROM APRIL 1, 1995 TO MARCH 31, 2000

DOG RIVER MATAWIN FOREST

WORKING GROUP	AGE CLASS	AREA (Ha)
SPRUCE	BS/NSR	43 245
	FTG-20	10 330
	21-40	46 686
	41-60	20 420
	61-80	24 419
	81-100	39 140
	101-120	31 580
	121+	46 079
	SUB TOTAL	261 899
BALSAM	BS/NSR	1 223
	FTG-20	316
	21-40	5 452
	41-60	12 545
	61-80	30 726
	81-100	10 000
	101-120	939
	121+	219
	SUB TOTAL	61 420
JACKPINE	BS/NSR	23 766
	FTG-20	20 654
	21-40	18 592
	41-60	5 610
	61-80	32 876
	81-100	21 100
	101-120	6 005
	121+	1 114
	SUB TOTAL	129 717
POPLAR	BS/NSR	24 603
	FTG-20	18 314
	21-40	14 350
	41-60	3 967
	61-80	21 458
	81-100	33 797
	101-120	25 114
	121+	9 041

	SUB TOTAL	150 644
BIRCH	BS/NSR	1 793
	FTG-20	120
	21-40	317
	41-60	7 202
	61-80	12 985
	81-100	9 314
	101-120	8 222
	121+	2 165
	SUB TOTAL	42 118
TOTAL		645 798

2005 Independent Forest Audit
DOG RIVER-MATAWIN 2000-2020 FMP
Table 5 – FMP-9 Summary of Crown Productive Forest by Forest Unit

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m^3)	(ha)	(m^3)		(ha)	(m^3)
PW	1 – 20						112.7	
	21 – 40						52.9	687.7
	21 – 40					FR	3.9	49.5
	61 – 80						9.4	773.0
	81 – 100						30.0	3 570.0
	81 – 100					FR	19.7	2 698.9
	101 – 120						9.3	1 395.0
	101 – 120					FR	6.0	948.0
	121 – 140					FR	84.0	13 440.0
	141 – 160					FR	10.6	1 453.4
	161 – 180					FR	133.5	17 755.5
	181 – 200					FR	.2	26.4
	201 – 220					FR	51.8	6734.0
	Forest Unit Subtotal						524.0	49 531.4
OH	1 – 20						44.4	
	21 – 40						24.5	9.6
	61 – 80	5.6	364.0				6.1	329.4
	81 – 100	9.9	792.0				25.8	1 909.2
	101 – 121	28.4	2 357.2	.4	33.2		17.1	1 419.3
	141 – 160						9.5	323.0
	Forest Unit Subtotal	43.9	3 513.2	.4	33.2		127.4	3 990.5

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m^3)	(ha)	(m^3)		(ha)	(m3)
PR	1 – 20						368.4	
	21 – 40						67.6	2 564.8
	101 – 120						19.2	3 686.4
	221 +						8.3	1 402.7
	Forest Unit Subtotal						463.5	7 653.9
OC							14.8	
	1 – 20						158.7	
	21 – 40						754.6	4 617.3
	41 – 60			1.3	33.8		230.8	5 042.7
	61 – 80			.1	5.5		56.5	2 806.5
	81 –100			3.1	263.4		146.2	11 517.2
	101 – 120	136.2	13 820.4	8.8	898.6		365.9	37 027.7
	121 – 140	228.7	23 634.8	1.9	190.1		494.0	49 831.0
	141 – 160	619.6	47 424.8	5.4	479.2		672.9	55 269.5
	161 – 180	28.8	1 843.2					
	181 – 200	8.4	403.2					
	Forest Unit Subtotal	1 021.7	87 126.4	20.6	1 870.6		2 894.4	166 111.9

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m^3)	Unavailable		Stage of Management	Unavailable	
				(ha)	(m^3)		(ha)	(m^3)
SPL							5 041.3	
	1 – 20			3.1			12 840.8	
	21 – 40	133.2		5.0	6.0		18 075.8	24 597.0
	41 – 60			9.6	147.6		9 334.8	118 856.4
	61 – 80	121.2	5 639.6	27.6	997.2		5 104.0	220 726.4
	81 – 100	813.2	59 550.6	18.8	1 397.4		7 533.	538 298.1
	101 – 120	2 234.1	213 782.4	24.3	2 276.1		8 981.0	854 718.3
	121 – 140	1 643.0	170 193.2	1.8	186.4		4 652.8	481 160.4
	141 – 160	8 913.0	848 544.3	5.9	560.4		13 530.6	1 314 891.9
	161 – 180	882.6	69 567.0	5.5	419.5		2 774.5	219 063.5
	181 – 200	17.4	1 148.4					
	Forest Unit Subtotal	14 757.7	1 368 425.5	101.6	5 990.6		87 869.3	3 772 312.0

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m^3)	(ha)	(m^3)		(ha)	(m^3)
Pj							1 486.2	
	1 – 20						26 753.8	
	21 – 40						12 478.5	415 469.8
	41 – 60	203.7	22 610.7				625.9	95 448.9
	61 – 80	112.8	19 940.2				18 765.6	3 395 487.5
	81- 100	21.0	4 200.0	7.6	1 517.6		13 076.1	2 588 116.8
	101- 120	123.9	20 445.5	3.2	547.0		4 526.3	796 208.7
	121 – 140	23.9	2 987.5				191.2	21 085.1
	141 – 160						260.9	21 676.9
	161 – 180						6.5	708.5

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m^3)	Unavailable		Stage of Management	Available (ha)	(m^3)
							78 171.0	7 334 202.2
PO							3 713.4	
	1 – 20			13.4	28.0		20 692.7	102 405.0
	21 – 40			2.6	143.0		6 666.3	207 720.0
	41 – 60	48.1	9 090.9	1.1	121.0		720.7	116 272.7
	61 – 80	46.2	11 735.2	20.5	5 089.3		3 935.1	983 141.3
	81 – 100	710.0	172 143.0	22.1	4 669.2		6 725.1	1 550 113.2
	101 – 120	333.2	59 284.0	18.6	3 263.2		6 889.9	1 205 510.6
	121 – 140			6.8	1 142.4		2 375.1	387 777.6
	141 - 160						502.6	91 271.0

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m^3)	(ha)	(m^3)		(ha)	(m^3)
	Forest Unit Subtotal	1 137.5	252 253.1	85.1	14 456.1		52 220.9	4 644 211.4
BW							185.2	
	1 – 20						199.6	
	21 – 40						620.0	8 503.6
	41 – 60						140.2	11 316.7
	61 – 80	81.0	9 865.3	21.8	2 538.2		1 782.8	209 276.4
	81 – 100	43.8	5 792.6	15.6	2 004.4		973.4	125 915.8
	101 – 120			9.7	921.5		648.4	54 446.0
	121 – 140	15.2	699.2	2.9	131.9		230.9	10 344.9

	Forest Unit Subtotal	140.0	16 357.1	50.0	5 596.0		4 780.5	419 803.4
Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m^3)	(ha)	(m^3)		(ha)	(m^3)
BF			(ha)	(m^3)	Unavailable	Stage of Management	Available	
	1 – 20							52.9
	21 – 40							61 380.4
	41 – 60							254 854.2
	61 – 80							1 451 734.4
	81 – 100							720 442.6
	101 – 120							49 422.9
	121 – 140							5 557.2
	141 – 160							310.8
	Forest Unit Subtotal				(ha)	(m^3)		(ha)

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m^3)	(ha)	(m^3)		(ha)	(m3)
SPU							3 582.6	
	1 – 20			4.8			18 476.8	
	21 – 40			1.7	8.7		17 939.5	244 205.6
	41 – 60			9.0	585.9		5 624.6	371 959.8
	61 – 80			6.7	806.8		6 548.0	780 416.6
	81 – 100			38.2	5 998.2		12 393.2	1 869 368.6
	101 – 120	13.9	2 307.4	16.7	2 816.7		12 599.8	2 123 674.3
	121 – 140			6.7	949.3		3 870.6	552 814.2
	141 – 160			3.3	418.5		5 754.2	720 706.2
	161 – 180						1 051.1	110 865.3
	181 – 200						16.9	1 371.9
	201 – 220						3.0	243.0
	Forest Unit Subtotal	13.9	2 307.4	87.1	11 584.1		87 860.3	6 775 625.5

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m^3)	(ha)	(m3)		(ha)	(m3)
MC1							7 466.7	
	1 – 20			45.4	1.6		30 307.4	12 617.2
	21 – 40			2.1	30.1		12 852.4	407 195.3
	41 – 60			134.8	13 633.0		7 479.7	734 888.8
	61 – 80	419.9	65 532.0	397.7	66 048.3		26 616.2	4 303 403.4
	81 – 100	148.1	30 427.4	324.6	66 431.0		24 363.4	4 988 603.5
	101 – 120	329.1	67 485.1	111.2	22 046.4		16 586.7	3 320 246.5
	121 – 140	26.5	3 385.7	47.0	5 427.8		3 726.8	476 522.8
	141 – 160	47.5	4 946.5	9.4	995.4		4 301.7	453 888.7
	161 – 180						217.7	22 625.1
	Forest Unit Subtotal	971.1	171 776.7	1 072.2	174 613.6		133 918.7	14 719 991.3

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m^3)	(ha)	(m^3)		(ha)	(m^3)
MC2							3 364.1	
	1 – 20			1.6	12.8		24 174.0	110 080.8
	21 – 40			5.3	198.2		28 810.0	1 028 881.4
	41 – 60			1.0	110.2		4 019.2	445 109.2
	61 – 80	87.4	17 043.0	32.3	6 163.5		7 981.5	1 492 418.7
	81 – 100	130.3	26 208.7	46.0	9 207.8		8 449.9	1 663 119.5
	101 – 120	307.7	44 787.1	67.9	10 508.6		9 121.4	1 405 201.3
	121 – 140	9.7	795.4	10.9	893.8		1 269.8	109 170.6
	141 – 160			2.3	193.2		851.6	73 815.4
	161 – 180	16.8	1 898.4					
	181 – 200						6.1	732.0
	Forest Unit Subtotal	551.9	90 732.6	167.3	27 288.1		88 047.6	6 328 528.9

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m^3)	Unavailable		Stage of Management	Available	
				(ha)	(m^3)		(ha)	(m^3)
MH							7 818.8	
	1 – 20			4.3	22.2		20 414.7	21 124.8
	21 – 40	9.7	533.5	7.2	181.5		7 549.4	232 436.4
	41 – 60	11.5	1 334.0	66.3	7 380.8		3 583.8	393 267.5
	61 – 80	899.7	154 065.1	243.7	41 167.7		21 900.2	3 706 477.8
	81 – 100	2 225.1	440 287.2	326.6	64 138.0		21 279.7	4 191 125.0
	101 – 120	1 144.6	191 170.4	338.2	55 718.0		24 450.9	4 145 569.5
	121 – 140	79.5	7 590.9	43.2	3 810.6		4 789.4	429 057.4
	141 – 160			9.0	657.0		1 648.2	120 728.6
	161 – 180						35.3	3 318.2
	181 – 200						20.8	2 329.6
	Forest Unit Subtotal	4 370.1	794 981.1	1 038.5	173 075.8		113 491.2	13 245 434.8

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m^3)	(ha)	(m^3)		(ha)	(m^3)
NFG							257.7	
	1 – 20			11.1			3 262.9	
	21 – 40			.8			754.2	
	Forest Unit Subtotal			11.9			4 274.8	
IS		2 321.3						
	Forest Unit Subtotal	2 321.3						
	TOTAL	25 976.7	2 876 346.9	3 110.9	476 677.1		683 037.3	60 011 152.6

Table 6 – Summary Report of Renewal, Tending and Protection Operations

The amount of renewal under taken on the forest is directly related to the depletions that are achieved over any given period. The FMP-25 renewal targets are difficult to predict because they are based on an estimate for the depletions for a previous plan plus a current plan. Generally areas that are harvested in the latter part of a previous plan will be artificially renewed by year 2 or 3 of a new plan. A comparison of the actual artificial and natural treatments over the 3 planning terms may indicate suitable trends.

2005 Independent Forest Audit
Table 6 - SUMMARY REPORT OF RENEWAL, TENDING AND PROTECTION OPERATIONS (RPFO-7)
Dog River Matawin Forest

	Area Summary of all Forest Unit (ha)					
	Past Plan Term		Past Plan Term		Current Plan Term	
	Planned	Actual	Planned	Actual	Planned	Actual
Renewal	1990 - 1995	1990 - 1995	1995 - 2000	1995 - 2000	2000 - 2005	2000 - 2005
Regeneration						
Uneven-Aged Management						
Selection Cut - Harvest						
Total Uneven-Aged Management						
Even-Aged Management Strip cut	100	0			500	0
Natural Regeneration Claag					1,000	0
Clearcut	400	446			5,832	1,551.70
Clearcut Sb natural	6,000	797	3,000	1,600	0	8,647.10
Seed Tree Cut	500	418	3,500	1,600	850	0
Coppice	12,000	6,662	18,000	3,276	13,420	17,176.20
Subtotal Natural	19,000	8,323	24,500	6,476	21,602	27,375.00
Artificial Regeneration						
Planting	23,437	20,755	13,000	17,083	21,850	18,210.10
Seeding direct	5,181	5,476	7,000	2,612	11,200	7,663.80
with site preparation	1,000	242	5,000	1,872	1,000	0
hand	0	430	0	0	0	0
Subtotal Artificial	29,618	26,903	25,000	21,567	34,050	25,873.90
Total Even-Aged Management	48,618	35,226	49,500	28,043	55,652	53,248.90
Total Regeneration	48,618	35,226	49,500	28,043	55,652	53,248.90
Site Preparation						
Mechanical	26,087	18,698	14,500	15,745	38,650	22,780.10
Chemical	2,800	2,973	0	1,991	200	9614
Slash pile burning	1,200	104	0	0	0	718
Total Site Preparation	30,087	21,775	14,500	17,736	38,850	24,459.50
Tending						
Cleaning						
manual	0	13				
chemical - ground	0	174	0	2,485	3,250	725.2
- aerial	18,726	14,204	18,620	22,462	35,100	18,900.00
mechanical	0	23				
prescribed burn						
Spacing, pre-commercial thinning, improvement cutting						
even-aged	750	0	750	7,465	7,500	4,630.90
commerical thinning			0	1,187		
Cultivation						
Total Tending	19,476	14,414	19,370	33,599	45,850	24,256.10
Protection (Insect Pest Control)						
accelerated harvest						
salvage						
manual protection						
ground insecticide		5				
aerial insecticide		14				
Total Protection		19				

Source:
planned: TMPM Table 4.19, FMPM Table FMP-25
actual: TMPM Table 4.4, FMPM Table RPFO-7, annual reports

2005 Independent Forest Audit
Table 6b - Comparison of Extensive and Intensive Silviculture
Dog River Matawin Forest

Renewal Class	Area Summary of all Forest Unit (ha)					
	Past Plan Term		Past Plan Term		Current Plan Term	
	Planned	Actual	Planned	Actual	Planned	Actual
	1990 - 1995	1990 - 1995	1995 - 2000	1995 - 2000	2000 - 2005	2000 - 2005
Natural	39.1	23.6	49.5	23.1	38.8	51.4
Artificial	60.9	76.4	50.5	76.9	61.2	48.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source:
Table 6 - SUMMARY REPORT OF RENEWAL, TENDING AND PROTECTION OPERATIONS (RPFO-7)

A review of the above summary indicates that naturals were not reported on a regular basis for the first 2 planning periods. The high percentage of naturals achieved in the 2000 – 05 period is the result of surveys conducted on the "cuts not treated" depletions. Post harvest forest operation prescriptions were also initiated during this period that identified areas for natural poplar regeneration that would have been recorded in the silviculture record keeping system (SRS).

Over the three planning terms the artificial regeneration treatments achieved 84% collectively (Table 6) of the planned target. During the 1995 – 2000 period a greater emphasis was placed on tree planting rather than aerial seeding since a number of plantations were destroyed by fire in 1995 and 1996. These areas were retreated under the Forestry Futures Fund program.

Table 7 – Harvested Area Successfully Regenerated – Summary of all forest units

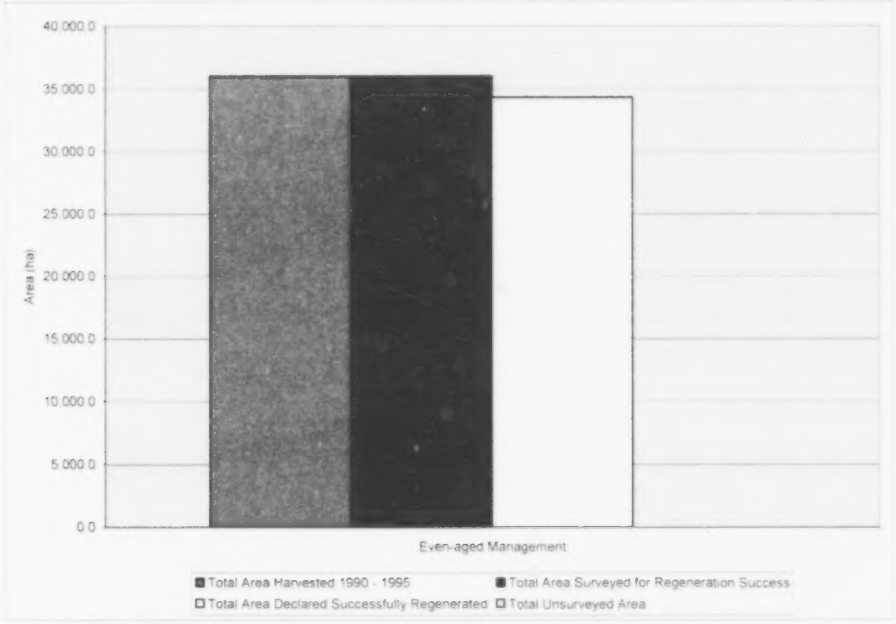
The information for table 7 was taken from queries with the Bowater GIS data base. The harvest depletions for the 1990 – 1995 period has been compared to the Free to Grow data base as of December 2004. The difference in area has been entered into Table 7 as the area still in NSR (1,704.0 ha). This would indicate that 4.7% of the area harvested from 1990-95 has not reached Free to Grow status. The area not available for regeneration that is in roads and landings represents another 5.2%.

The results of the Free to Grow surveys would indicate that silviculture objectives have been achieved. This would confirm that there have been no major changes in the species or forest unit composition of the production forest of Table 1.

2005 Independent Forest Audit
Table 7 - Harvested Area Successfully Regenerated - Summary of all forest Units

Dog River Matawin Forest

	AREA IN HECTARES (All Forest Units Combined) Even-aged Management
Total Area Harvested 1990 - 1995	35,962.0
Total Area Surveyed for Regeneration Success	35,962.0
Total Unsurveyed Area	0.0
Total Area Declared Successfully Regenerated	34,258.0
Total Area Surveyed Not Successfully Regenerated	
NSR	1,704.0
B&S	
Not Available for Regen. (eg. Roads & landings)	1,875.9
Other	
Percent of Area Surveyed Declared Successfully Regenerated	95.3



Information for this table and graph was obtained from Bowater GIS queries for harvest depletions for the period 1990 - 95. The FTG information was obtained from the current FTG data base for the Dog River Matawin Forest on the Bowater GIS system.

Trend Analysis for the Dog River Matawin Forest for the 2000- 2005 FMP
Table 8: Volume and Depletion Area Summary for the Period 1990 to 2005

Plan	Harvest Volume		Harvest Depletion		Volume/ha.	
	Forecast	Actual	Forecast	Actual	Forecast	Actual
1990-95	6,546,270	3,530,457	61,200.50	35,422.50	106.9	99.7
1995-00	7,259,000	4,548,829	53,797.00	41,684.50	134.9	109.1
2000-05	7,659,400	5,197,580	46,703.50	41,261.00	164	125.9

For the area depleted, table 8 indicates that Bowater is not recovering the anticipated volume for the 3 planning terms. The following factors may have contributed to the difference between forecast and actual metres/hectare:

1. the amount of birch left behind in the previous planning terms (1990 - 2000)
2. balsam fir killed by spruce budworm not available for harvest
3. the 1976 inventory over estimated the volume for mixed wood stands.

The increase in the actual yield per hectare would have been the result of the converison to full tree chipping in the mid 1990's and the use of satellite images for more accurate depletion mapping.

The present volume harvested on a block is now recorded in WTS which may assist to verify the accuracy of the new 1996 inventory.

APPENDIX B

ROLES, RESPONSIBILITIES, AND QUALIFICATIONS OF THE AUDIT TEAM

Name	Role	Responsibilities	Credentials
Mr. Bruce Byford Arbex Forest Resource Consultants Ltd.	Lead Auditor Forest Management & Silviculture Auditor	Audit Management & coordination Liaison with OMNR & Auditee Review documentation related to forest management planning and review and inspect silviculture practices Determination of the sustainability component.	B.Sc.F. R.P.F. ISO 14001 Lead Auditor Training. FSC assessor training. 26 years of consulting experience in Ontario in forest management planning and resource inventory. Previous work experience on 5 IFA audits and FSC certification assessments.
Mr. Al Stewart Arbex Senior Associate	Wildlife/First Nations Auditor	Review & inspect AOC documentation & practices First Nations consultation Determination of the sustainability component.	B.Sc. (Agr) ISO 14001 Lead Auditor Training. FSC assessor training. 37 years experience in natural resource management planning, field operations, policy development, auditing and working with First Nation communities. Previous work experience on 5 IFA audits.
Mr. David Watton Arbex Senior Associate	Forest Management Planning & Public Participation Auditor	Review documentation and practices related to forest management planning & public participation Determination of the sustainability component.	B.Sc., M.Sc. ISO 14001 Lead Auditor Training. 37 years experience in natural resource management planning, land use planning, field operations, and policy development. Previous work experience on 4 IFA audits.

Mr. Guy Winterton Arbex Senior Associate	Forest Compliance Auditor	Review FMP and related documents to ensure compliance with FMPM and other regulations Review field operations for compliance with regulations and guidelines and other documents.	B.Sc., M.Sc. ISO 14001 Lead Auditor Training. FSC assessor training. Previous work experience on 4 IFA audits. 37 years experience in all aspects of fisheries and wildlife planning, policy development, field operations and natural resource law enforcement.
Mr. Trevor Isherwood Trilac Forestry Services Arbex Associate	Silvicultural, Forest Management and Contractual Compliance Auditor	Review and inspect silvicultural practices and related documentation Review and inspect documents related to contractual compliance and socio-economics Determination of the sustainability component.	B.Sc.F. R.P.F. Former General Manager of SFL 37 years experience in forest management and operations. Previous work on 1 IFA audit.
Mr. Nicholas Baggs N.G.B. Forest Management Consulting	Technical Advisor - SFMM	Analysis of SFMM model outputs and decision criteria and the determination of the sustainability component.	B.Sc.F. R.P.F. Previous work experience on IFA audits and FSC certification assessments Experience as OMNR Planning Forester & Unit Forest.

APPENDIX C

INDEPENDENT FOREST AUDIT GUIDING PRINCIPLES

Summary of the Eight Guiding Principles within the Audit Protocol

There are eight guiding principles contained in the 2005 Draft Independent Forest Audit Process and Protocol, which guide the audit.

Commitment Commitment is reflected in vision, mission, and policy statements of the Company. Vision and mission statements are intended to provide long-term guidance for the organization. Policy statements reflect how the organization's vision and mission will be achieved. These statements must be reflected in the day-to-day operations of the organization.
Public Participation The process of sustainable forest planning, implementation, and monitoring is conducted in an open consultative fashion, with input from all members of the planning team, Local Citizen's Committee, native groups and other parties with an interest in the operations of the forest unit.
Forest Management Planning The forest management planning process involves the input of a number of individuals and groups to describe the current condition of the forest, the values and benefits to be obtained from the forest, the desired condition of the forest in the future, and the best methods to achieve the goal. Certain minimum standards and procedures have been established upon which all management units are evaluated.
Plan Implementation Verification of the actual results of operations in the field compared to the planned operations is required to be able to assess achievements of the plan objectives and compliance with laws and regulations. In conjunction with the review of operations, the reporting tables are tested to ensure accurate results are reported.
Support System System support concerns resources and activities needed to support plan implementation so as to achieve the desired objectives. Appropriate control, documentation and reporting procedures must be in place and operational. Planned action should occur at planned times, in planned places and to the planned degree.
Monitoring The activities and the effects of these activities in achieving management objectives must be regularly measured and assessed. In particular, the indicators of achievement must be assessed and their effectiveness reviewed.

Achievement of Management – Objectives & Forest Sustainability Periodic assessments of the management of the forest unit operations and the forest unit must be made in order to determine whether forest sustainability and other management objectives are being achieved. This includes comparing the actual values of the predetermined indicators against the planned values and assessing the reasons for any significant deviations.
Contractual Compliance The licencee must comply with the specific licence requirements.

APPENDIX D

GLOSSARY OF ACRONYMS USED

List of Acronyms

ACOP	Annual Compliance Operations Plan
AHA	Available Harvest Area
AOC	Area of Concern
AR	Annual Report
AWS	Annual Work Schedule
B&S	Barren and Scattered
BFPL	Buchanan Forest Products Ltd.
B.Sc.F.	Bachelor of Science in Forestry
CAS	Compliance Activity Schedule
CFSA	Crown Forest Sustainability Act
DRMF	Dog River-Matawin Forest
DM	District Manager
EMS	Environmental Management System
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FMNCP	Forest Management Native Consultation Program
FOCIS	Forest Operations Compliance Information System
FOIP	Forest Operations Information Program
FRI	Forest Resource Inventory
FOP	Forest Operations Prescription
FSOS	Forest Simulation and Optimization System
FTG	Free-to-Grow
FU	Forest Unit
GIS	Geographic Information System
HA	Hectares
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
ISO	International Standards Organization
LCC	Local Citizens Committee
m^3	Cubic Metres
NIC	Not in Compliance
NRVIS	Natural Resource Values Information System
NSR	Not Satisfactorily Regenerated
OMNR	Ontario Ministry of Natural Resources
R.P.F.	Registered Professional Forester
RPFO	Report of Past Forest Operations
RSA	Resource Stewardship Agreement
SEIM	Socio-Economic Impact Modeling
SEV	Statement of Environmental Value
SFI	Sustainable Forestry Initiative
SFL	Sustainable Forest Licence
SFMM	Sustainable Forest Management Model

SGR's	Silvicultural Ground Rules
SMA	Selected Management Alternative
SPF	Spruce Pine Fir
TCO	Traditional Crown Operators

APPENDIX E

SUMMARY OF INPUT TO THE AUDIT PROCESS

Appendix E - Summary of Input to the Audit Process

A major focus of the audit was to gain an understanding of how forest management activities on the Dog River-Matawin Forest affected users of the forest.

The following briefly summarizes the contacts and the issues raised. All these contacts and issues are fully discussed throughout the body of the report.

General Public /Other Stakeholders

Notices describing the audit process, and soliciting input, and providing audit dates and contact coordinates of the Auditor were disturbed by the following means:

- Local newspaper advertisement.
- Individual letters sent to First Nation Chiefs and LCC members.
- Letters sent to a randomly selected 35 percent of the individuals on the OMNR Dog River Matawin Forest mailing list.

Telephone contacts were made with representative stakeholders and interviews were conducted as necessary or on request.

The principal issues raised with the auditor included;

- Harvested wood left on sites.
- Lack of public input with respect to the 2005 FMP.
- Incidences of rutting on some cutover sites.
- Slash management.
- Poor road maintenance.

Local Citizen's Committee

All LCC members received individual letters inviting participation and the opportunity for a personal interview. The auditor attended a regularly scheduled meeting of the LCC during the field work phase.

Principal issues that were identified included:

- Unrealistic and largely unobtainable responsibilities for the LCC.
- The complex forest management planning process.
- Problems and dissatisfaction with respect to the 2005 planning process.

Native Communities

Invitations to participate in the audit process were sent to the Lac des Milles Lacs and Fort William First Nations. The auditors interviewed a representative from the Lac des Milles Lacs First Nation and a community member.

Principal issues that were identified included:

- Enhanced economic opportunities for First Nations in forestry.
- Jurisdiction issues.
- Financial and technical capacity to participate effectively in forest management planning.

Overlapping Licencee &, Contractors

Interviews were conducted with BFPL and the Tradition Crown Operators.

Principal issues that were identified included:

- Traditional allocations were not respected (TOC).
- Wood allocation arrangements.
- Lack of meaningful involvement in the planning process.

SFL Holder

Including a preliminary 2 day visit to the Bowater Thunder Bay Office and the 5 days of the field audit, the auditor spent many hours with individual SFL staff representing all levels in the organization. The results of these numerous discussions are reflected throughout this audit report.

Ministry of Natural Resources

The auditor met with OMNR staff at the preliminary visit and the 5 days of the field audit. Contacts included all levels of the organization from field technicians to the District Manager. Regional and Forest Management

Branch OMNR staff participated in the field audit. The results of these numerous discussions are reflected throughout this audit report.